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Governor's Energy Council

Dick Thornburgh
Governor
Pennsylvania

William W. Scranton, III
Lieutenant Governor
Chairman, Governor's Energy Council

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COMMONWEALTH OF PENNSYLVANIA
GOVERNOR'S OFFICE
HARRISBURG

Dear Reader:

This first edition of The Pennsylvania Energy Profile, 1960 - 1979 provides a statistical history of energy use and production in Pennsylvania. It replaces two earlier Energy Abstracts (Winter 1979 and Winter 1979-80) produced by the Governor's Energy Council.

Used in conjunction with our Pennsylvania Energy Policy (July 1981), the Profile should help our state's citizens better plan their energy futures. Please let us know if it is useful to you and how we might improve future editions.

Sincerely,

Robert A. Shinn

Robert A. Shinn
Executive Director
Governor's Energy Council

THE PENNSYLVANIA ENERGY PROFILE
1960-1979

BUREAU OF ENERGY POLICY AND PLANNING
PENNSYLVANIA GOVERNOR'S ENERGY COUNCIL
HARRISBURG, PENNSYLVANIA 17105

MARCH 1982

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FOREWORD

All data in this profile are the most recent available for all fuels in each end-use sector on an annual basis for the period 1960-1979. Just before the report went to press, some source materials containing 1980 data were released, and these, where applicable, were added.

The majority of the tables were compiled directly from primary sources. Statistical information contained in this report are Pennsylvania-specific, unless otherwise indicated. Diagrams and narratives are provided to highlight significant trends in Pennsylvania energy consumption. Selected comparisons of these data with national data are also presented.

The Governor's Energy Council would appreciate any questions and comments regarding the information presented in this report. Information not yet available when the report was published can be obtained upon request as it becomes so.

This report was prepared by the following staff of the Bureau of Energy Policy and Planning of the Governor's Energy Council, under the direction of Jan H. Freeman, Associate Director.

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INTRODUCTION

This report presents basic information relating to Pennsylvania's energy system providing data on consumption, supply, production and prices from 1960 through 1979, and where available for 1980.

Historical information is provided for primary and net consumption of energy by types of fuel and sector usage. Primary consumption represents the total consumption of principal resources by the following sectors: residential, commercial, industrial, transportation and the electric utilities. Net consumption is the end-use consumption by the first four sectors listed above and includes electricity sales to each of those sectors. It does not include electrical losses incurred in the generation and transmission of electricity. A separate table indicating total U.S. consumption of Pennsylvania anthracite has been provided due to revived interest in this resource.

In most instances, this report presents statistics on total consumption for each energy form. The energy consumption data, however, exclude non-energy petroleum products. Consequently, adjustments have been made so that asphalt, lubricants, road oil and other non-energy petroleum products are not included in the annual total state energy requirements.

The national energy consumption data which are used in this report have, for comparative purposes, been compiled and adjusted in the same manner as the state data — both exclude non-energy petroleum products and sales of electricity. The same methodology has been used to calculate per capita and per gross product for the Commonwealth and the nation.

Comparative energy prices by fuel type have been presented for the residential, commercial and industrial sectors, including both the retail and wholesale prices. Domestic coal prices of bituminous, at the mine-mouth, and anthracite, at preparation plants, are also provided.

Particular emphasis is given to the electric utility industry. Included in the report is the most recent information available regarding Pennsylvania's electric generating facilities, installed generating capacity and utility fuel costs.

The appendices of this report present consumption of non-energy petroleum products in Pennsylvania, selected macroeconomic energy consumption indicators for the state and nation, heating degree days for Pennsylvania and selected cities, U.S. price indices, selected OPEC energy data and total U.S. petroleum imports. A glossary and conversion table have also been included.

Because reliable data on alternative energy resources, such as solar, wind and wood are not available at the present time, this report does not provide these consumption, supply, production, and price figures.

HIGHLIGHTS

In 1979, Pennsylvania ranked as the fourth largest energy consuming state in the nation. The nation as a whole relied on petroleum (47 percent) and natural gas (26 percent) to provide almost three-fourths of the total energy required. Pennsylvania relied on petroleum (40 percent) and natural gas (18 percent) to provide almost 60 percent of its energy requirements in the same year. Coal, the state's most abundant indigenous resource, supplied 41 percent.

Primary energy consumption in Pennsylvania reached 4,136.9 trillion British thermal units (Btu) in 1979. This was 3 percent above the 1978 level and also higher than the 1.5 percent annual average growth for the full 1960 through 1979 period. The highest level of primary energy consumption recorded for Pennsylvania was 4,142.2 trillion Btu in 1973, only 0.1 percent above the 1979 level.

Major sources of energy which increased from 1978 to 1979 were coal (up 11.8 percent) and natural gas (up 10.2 percent); major sources which decreased were petroleum (down 6.3 percent) and nuclear (down 15.8 percent). Availability and price are considered the two major contributors to the increased consumption of natural gas. The number of gas wells completed in Pennsylvania during 1979 was 1,044. Although this is 5.6 percent lower than the 1978 level, the nation as a whole reached a record high of 14,681 — 12 percent above the completions in 1978. The average wellhead price of natural gas in Pennsylvania increased 53 percent to $1.21 per million Btu in 1979. Price is also considered to be a major factor in the increased use of coal and decreased use of petroleum in 1979. The price of bituminous coal increased only 5 percent to $1.30 per million Btu and anthracite coal increased only 7 percent to $1.61 per million Btu, while the average price of crude oil in Pennsylvania increased by 62 percent to $4.15 per million Btu. Oil wells completed in Pennsylvania during 1979 totaled 762, 33.5 percent above the level of completions in 1978. Although the number of new oil well completions for the nation has fluctuated over the years, it climbed from an all time low of 9,902 in 1973 to 19,383 in 1979, up 9 percent from 1978. The decline in nuclear power generation is attributed principally to changes in regulatory activities and requirements following the Three Mile Island accident in March 1979.

Three of the major end-use sectors decreased their primary energy consumption between 1978 and 1979: the residential sector (down 3.1 percent), the commercial sector (down 22.1 percent), and the transportation sector (down 2.1 percent). Decreases in the use of petroleum in each of these sectors was the primary cause of the sector decreases: the residential sector (down 5.5 percent), the commercial sector (down 43.5 percent), and the transportation sector (down 2.4 percent). Coal usage also decreased for the residential sector (down 32.1 percent) and the commercial sector (down 37.2 percent). The industrial sector increased its use of primary energy by 15 percent in 1979. This increase came from a rise in petroleum (up 13.5 percent), natural gas (up 24.3 percent), and coal (up 11.7 percent).

Pennsylvania was among the ten largest petroleum, natural gas and coal consuming states in 1979. As the sixth largest petroleum consumer, it accounted for 4.5 percent of all petroleum consumed in the nation. As number eight on the list of leading natural gas consumers, it accounted for 3.7 percent of all natural gas consumed. Pennsylvania led the top ten coal consuming states and accounted for 11.4 percent of the U.S. coal consumption total.

Primary energy consumption in Pennsylvania from 1960 through 1979 increased 33 percent. Of the major energy sources used during this time period — petroleum, natural gas and coal — petroleum had the largest growth, 42 percent, followed by natural gas with a growth of 39 percent, and coal which grew by 13 percent. Hydroelectricity, a smaller contributor to the primary energy consumed in Pennsylvania, decreased by 35 percent.

While the level of primary energy consumed in Pennsylvania grew from 1960 to 1979, the state's population increased by 4 percent, producing a per capita increase in primary energy consumption of 28 percent. The use of primary energy in Pennsylvania averaged 275 million Btu per person in 1960 and 352 million Btu per person in 1979.

SECTION ONE

PENNSYLVANIA ENERGY SUPPLY AND PRODUCTION

Pennsylvania consumes almost twice as much energy as it produces. The total primary energy consumption in 1979 was 4,136.9 trillion Btu, while the totai primary energy production was 2,256.1 trillion Btu. This section presents the state's primary production data from 1960 through 1979. Graphical presentations of these data follow. The 1980 data is recorded where available. It is indicated with an asterisk on the flow charts.

In addition, this section shows Pennsylvania's energy supply and demand for anthracite and bituminous coal on accompanying flow charts. The flow charts provide an immediate and complete overview of the amount of Pennsylvania coal production and consumption and illustrate the efficiencies of coal usage for each consuming sector.

Coal is the most abundant primary energy resource in Pennsylvania providing approximately 41.6 percent of the primary energy consumed in the state. Among all the states, Pennsylvania now ranks first in coal consumption and fourth in production. Total coal production in 1979 was 94 million tons. It has fluctuated over the last twenty years, increasing at a compound annual rate of only 0.6 percent from 1960 through 1979. A decrease in anthracite production has been balanced by an increase in bituminous production.

Pennsylvania anthracite production in 1979 was 4.8 million tons, down 72.7 percent from 1960. As illustrated in the flow chart, of the 4.8 million tons produced, 0.7 million tons were sent out of state, 1.5 million tons were exported out of the U.S. and 2.6 million tons were consumed in Pennsylvania, with electric utilities being the largest user.

The 1979 bituminous coal production in Pennsylvania was 89.2 million tons, 35.9 percent above the level produced in 1960. The bituminous coal flow chart indicates that 33.3 million tons were sent to other states and 11.0 million tons were exported out of the U.S. Coal amounting to 17.2 million tons came to Pennsylvania from other states. Distribution of bituminous coal for consumer use totaled 65.1 million tons with the electric utilities, again, consuming the largest share.

This section also presents a summary of the natural gas flows in Pennsylvania. The Commonwealth produces only a small fraction of the natural gas it consumes. In 1979, natural gas production in Pennsylvania was 96.3 billion cubic feet (Bcf), or only 13 percent of the total consumption of 741.0 Bcf. Natural gas provided approximately one-sixth of Pennsylvania's total energy consumption and almost half of all the energy used in homes in 1979. Pennsylvania receives much of its gas from interstate pipelines. The sources of natural gas for these pipelines are in Texas, Louisiana and other southwest states.

Finally, this section includes a summary of refinery inputs and outputs in Pennsylvania and a comparison of petroleum product consumption and production by product in 1979. Pennsylvania produces only 1 percent of the primary petroleum products it consumes. It ranks 23rd among oil producing states. In 1979, crude oil production was 2.9 million barrels (MMBbl) and consumption of primary petroleum products totaled 260 MMBbl. Pennsylvania is a major refining state. The 1979 refining capacity was 799 thousand barrels per day, representing about 5 percent of U.S. refining capacity. Ninety percent of the Pennsylvania refining capacity is located in the eastern part of the state. Pennsylvania refineries produced 275.0 MMBbl of refined products in 1979. Of this total, gasoline was the largest amount at 125.7 MMBbl or 45.7 percent (in physical units). The other major refined products were distillate fuel oil, residual fuel oil, jet fuel, kerosene and liquefied petroleum gas (LPG). Pennsylvania was a new importer of most petroleum products in 1979. However, the state was a new exporter of gasoline (9.5 MMBbl) or about 8.2 percent of the total consumption.

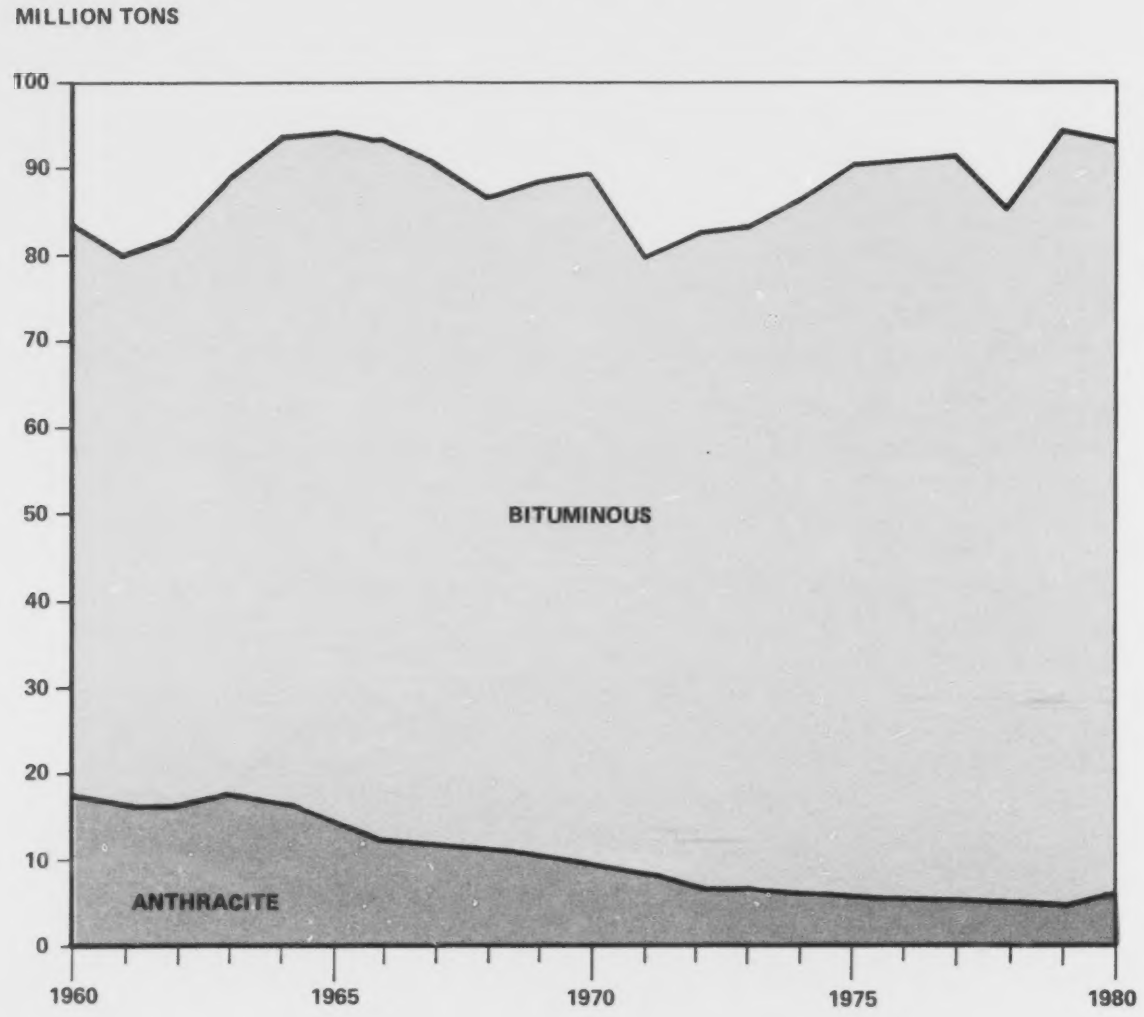
PRIMARY ENERGY PRODUCTION, 1960-1980
PENNSYLVANIA

	Anthracite Coal		Bituminous Coal		Total Coal		Crude Oil		Natural Gas		Hydro Electricity		Total Primary Energy Production	Change From Previous Year
Year	Trillion Btu	Thousand Tons	Trillion Btu	Thousand Tons	Trillion Btu	Thousand Tons	Trillion Btu	Thousand Barrels	Trillion Btu	Million Cubic Feet	Trillion Btu	Million Kwh	Trillion Btu	
1960	430.3	17,721	1,683.2	65,596	2,113.5	83,317	34.9	6,009	117.9	113,928	19.4	1,809	2,285.7	—
1961	403.1	16,507	1,815.9	63,171	2,019.0	79,678	32.7	5,643	103.9	100,427	15.7	1,472	2,171.3	– 5.0
1962	402.3	16,496	1,679.3	65,648	2,081.6	82,144	30.8	5,302	93.2	90,053	15.9	1,504	2,221.5	+ 2.3
1963	421.5	17,411	1,818.5	71,259	2,240.0	88,670	29.5	5,083	95.5	92,657	13.3	1,267	2,378.3	+ 7.1
1964	398.7	16,525	1,917.7	77,322	2,370.4	93,847	29.7	5,113	84.8	82,166	13.3	1,267	2,498.2	+ 5.0
1965	343.5	14,230	2,036.7	80,120	2,380.2	94,350	28.5	4,922	87.2	84,461	13.7	1,313	2,509.6	+ 0.5
1966	288.1	12,031	2,060.7	81,450	2,348.8	93,481	25.2	4,337	93.9	90,914	14.8	1,425	2,482.7	– 1.1
1967	271.6	11,552	1,990.2	79,101	2,261.8	90,653	25.4	4,387	92.8	89,966	19.8	1,899	2,399.8	– 3.3
1968	257.4	11,025	1,897.4	75,715	2,154.8	86,740	24.1	4,160	90.7	87,987	12.1	1,168	2,281.7	– 4.9
1969	238.0	10,166	1,946.8	78,185	2,184.8	88,351	25.8	4,448	81.6	79,134	9.4	902	2,301.6	+ 0.9
1970	216.4	9,248	1,968.7	80,092	2,185.1	89,340	23.7	4,093	79.2	76,841	13.1	1,251	2,301.1	– 0.02
1971	192.4	8,188	1,739.9	71,777	1,932.3	79,965	22.0	3,798	80.9	78,451	8.1	771	2,043.3	– 1.1
1972	151.3	6,462	1,824.5	75,863	1,975.8	82,325	20.0	3,441	76.0	73,958	15.9	1,533	2,087.7	+ 2.2
1973	145.8	6,293	1,843.9	76,797	1,989.7	83,090	19.0	3,282	80.2	78,514	14.2	1,371	2,103.1	+ 0.7
1974	137.4	6,090	1,899.4	80,042	2,036.8	86,132	20.2	3,478	84.6	82,637	14.5	1,392	2,156.1	+ 2.5
1975	131.7	5,629	1,959.9	84,479	2,091.6	90,108	18.9	3,264	86.5	84,676	16.4	1,575	2,213.4	+ 2.7
1976	120.5	5,292	1,985.1	85,748	2,105.6	91,040	17.5	3,019	91.2	89,386	14.7	1,415	2,229.0	+ 0.7
1977	117.3	5,061	1,961.8	86,422	2,079.1	91,483	15.7	2,715	93.6	91,717	12.6	1,205	2,201.0	– 1.3
1978	118.5	5,038	1,802.1	80,343	1,920.6	85,381	16.7	2,887	99.6	97,763	7.9	759	2,044.8	– 7.1
1979	114.1	4,835	2,014.3	89,167	2,128.4	94,002	16.7	2,874	98.3	96,313	12.7	1,221	2,256.1	+10.3
1980	141.1	5,983	1,966.9	87,069	2,108.0	93,052	17.1	2,940	99.5	97,439	7.7	734	2,232.3	– 1.1

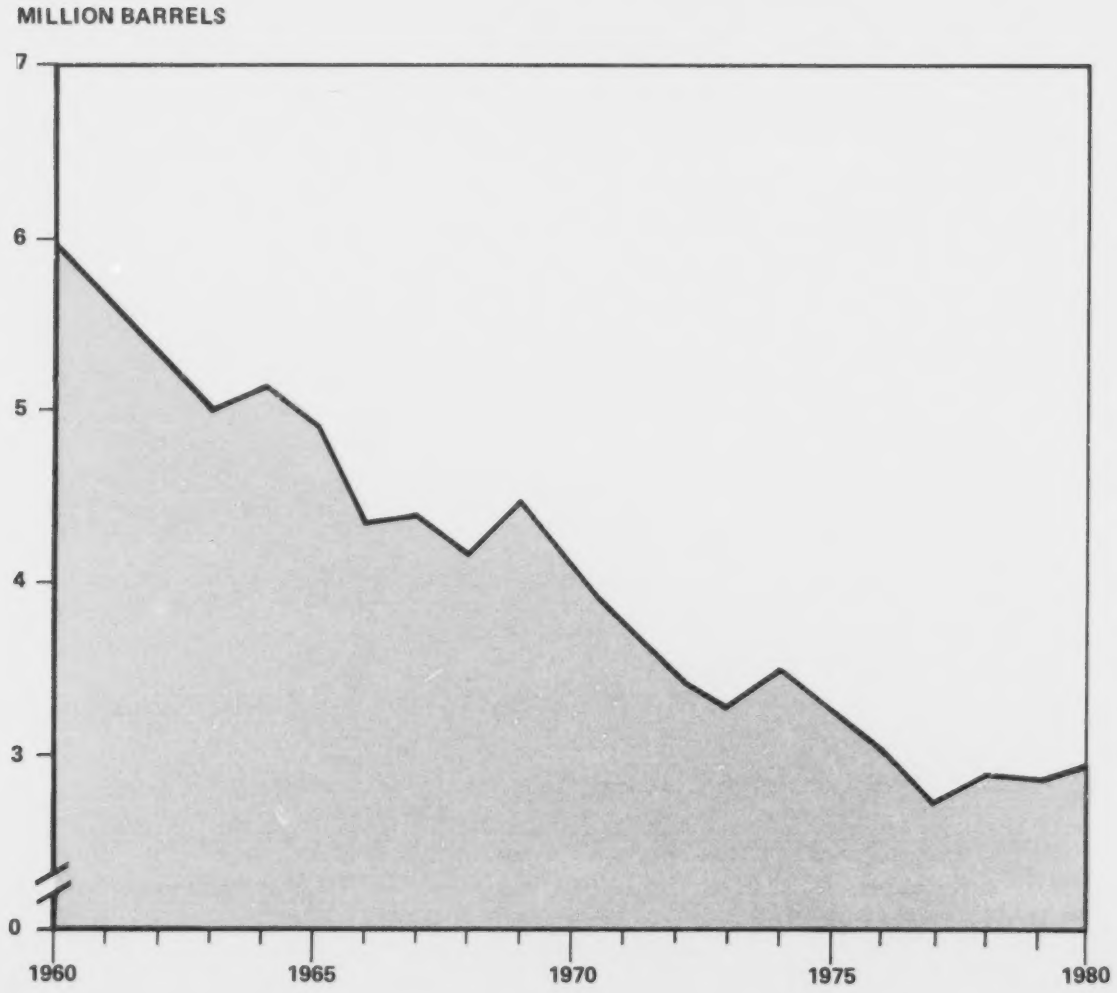
Note: The reported Btu-content of all fuels except crude oil has varied historically. The values used in conversion for this table are those estimated by the U.S. Department of Energy for the respective years.

Sources: Pennsylvania Department of Environmental Resources, *Annual Report on Mining, Oil and Gas, and Land Reclamation and Conservation Activities*, 1980.
Pennsylvania Oil and Gas Association.
American Petroleum Institute, *Basic Petroleum Data Book*, Vol. 1, No. 3.
American Gas Association, *Gas Facts*, annual.
U.S. Department of Energy, Energy Information Administration, *Crude Petroleum, Petroleum Products and Natural Gas Liquids*, annual; *Natural Gas Production and Consumption*, annual; *Power Production, Fuel Consumption, and Installed Capacity Data*, annual; *1980 Annual Report to Congress, Vol. 2: Data; Weekly Coal Production.*
Federal Power Commission, Form 4.

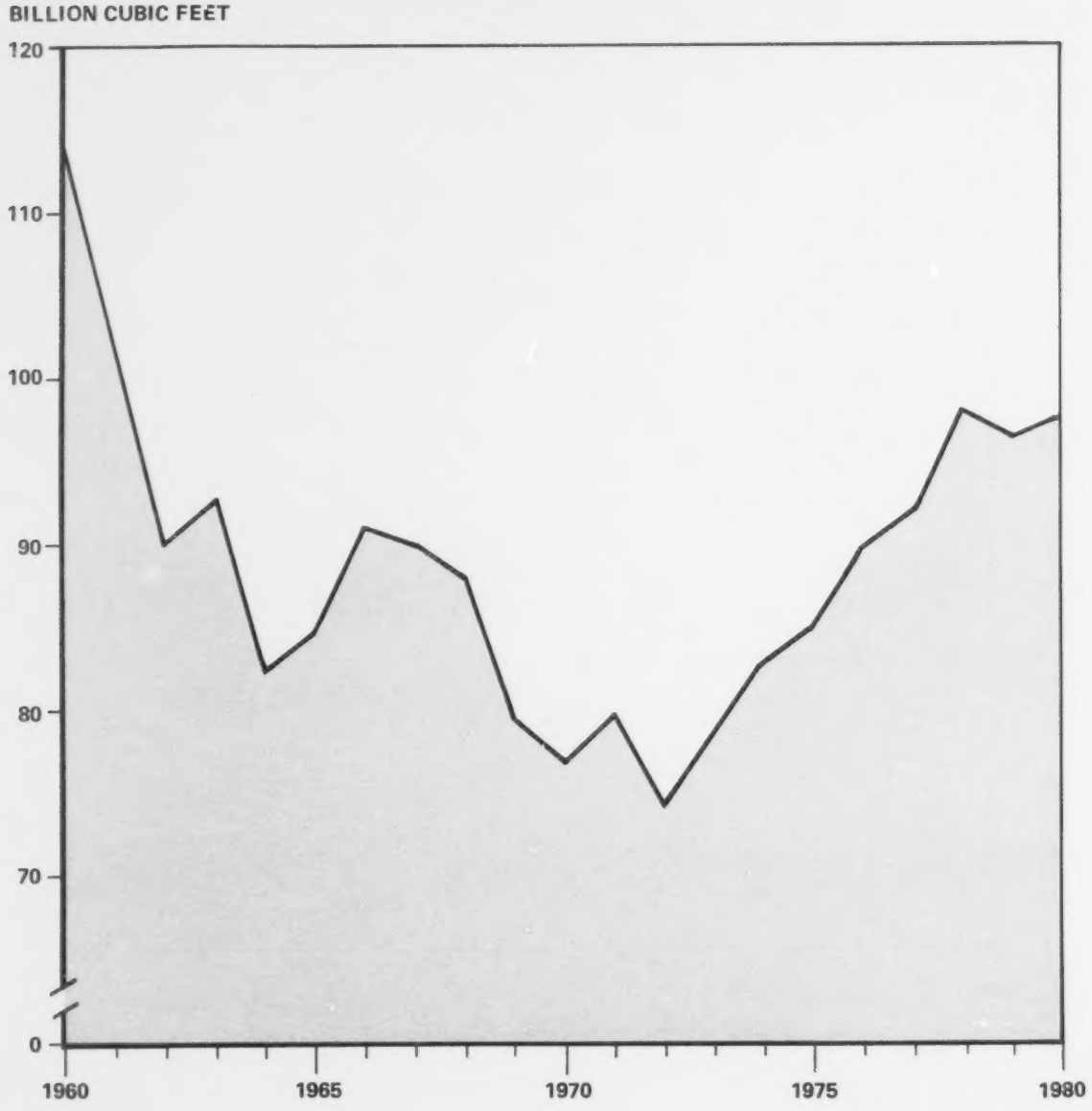
ANTHRACITE AND BITUMINOUS COAL PRODUCTION, 1960-1980
PENNSYLVANIA



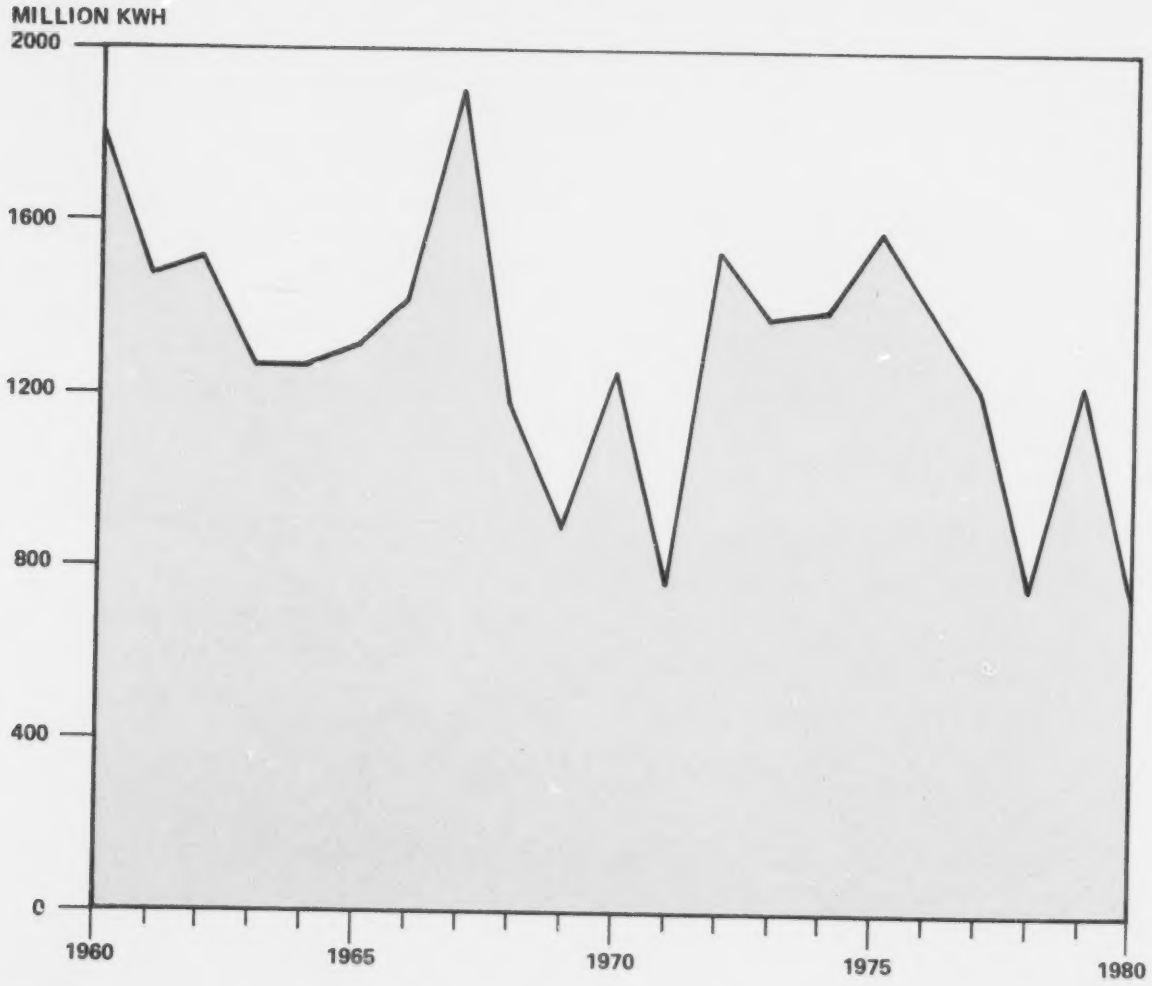
CRUDE OIL PRODUCTION, 1960-1980
PENNSYLVANIA



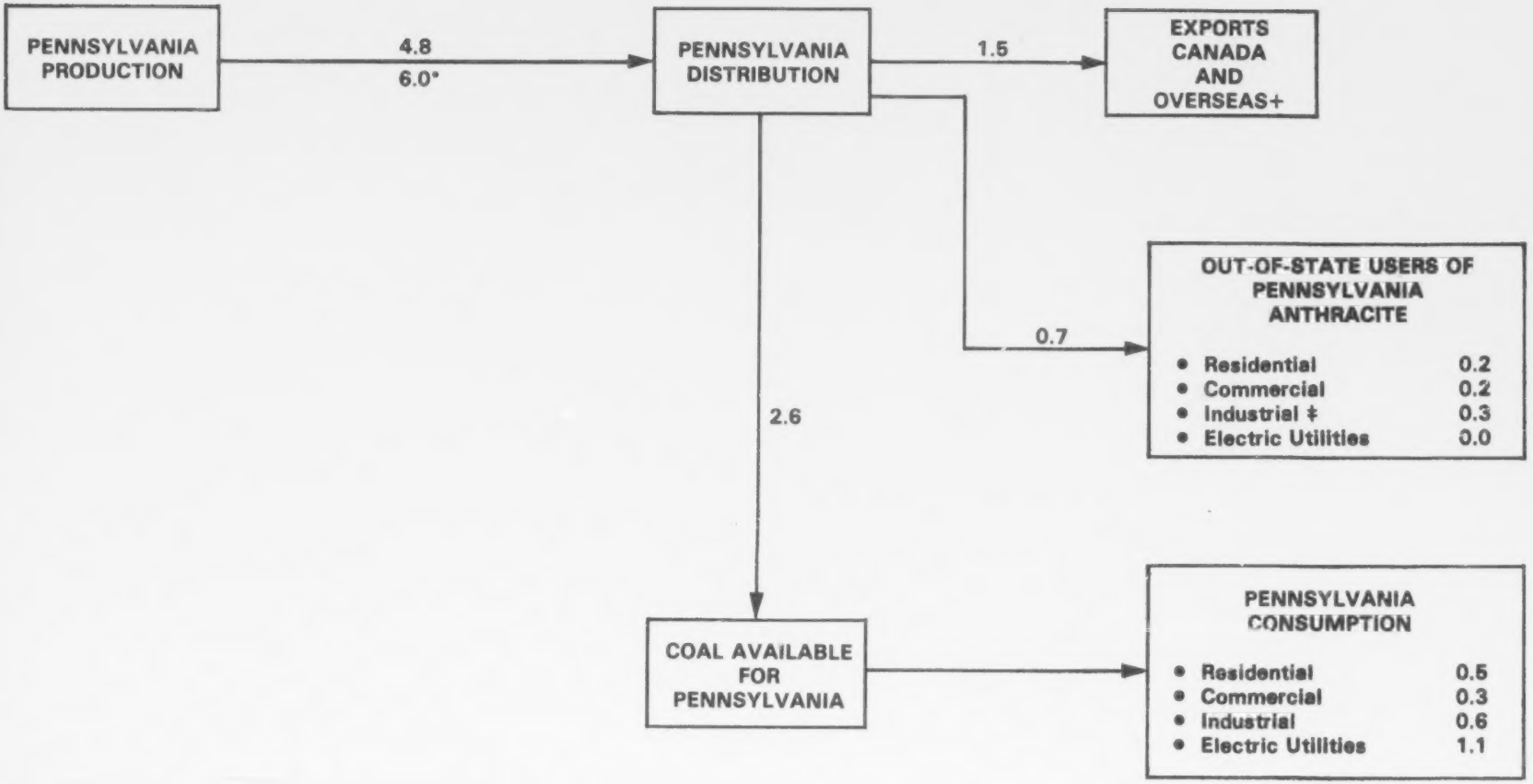
NATURAL GAS PRODUCTION, 1960-1980
PENNSYLVANIA



HYDRO POWER PRODUCTION, 1960-1980
PENNSYLVANIA



PENNSYLVANIA ANTHRACITE COAL FLOWS, 1979
(Million short tons)



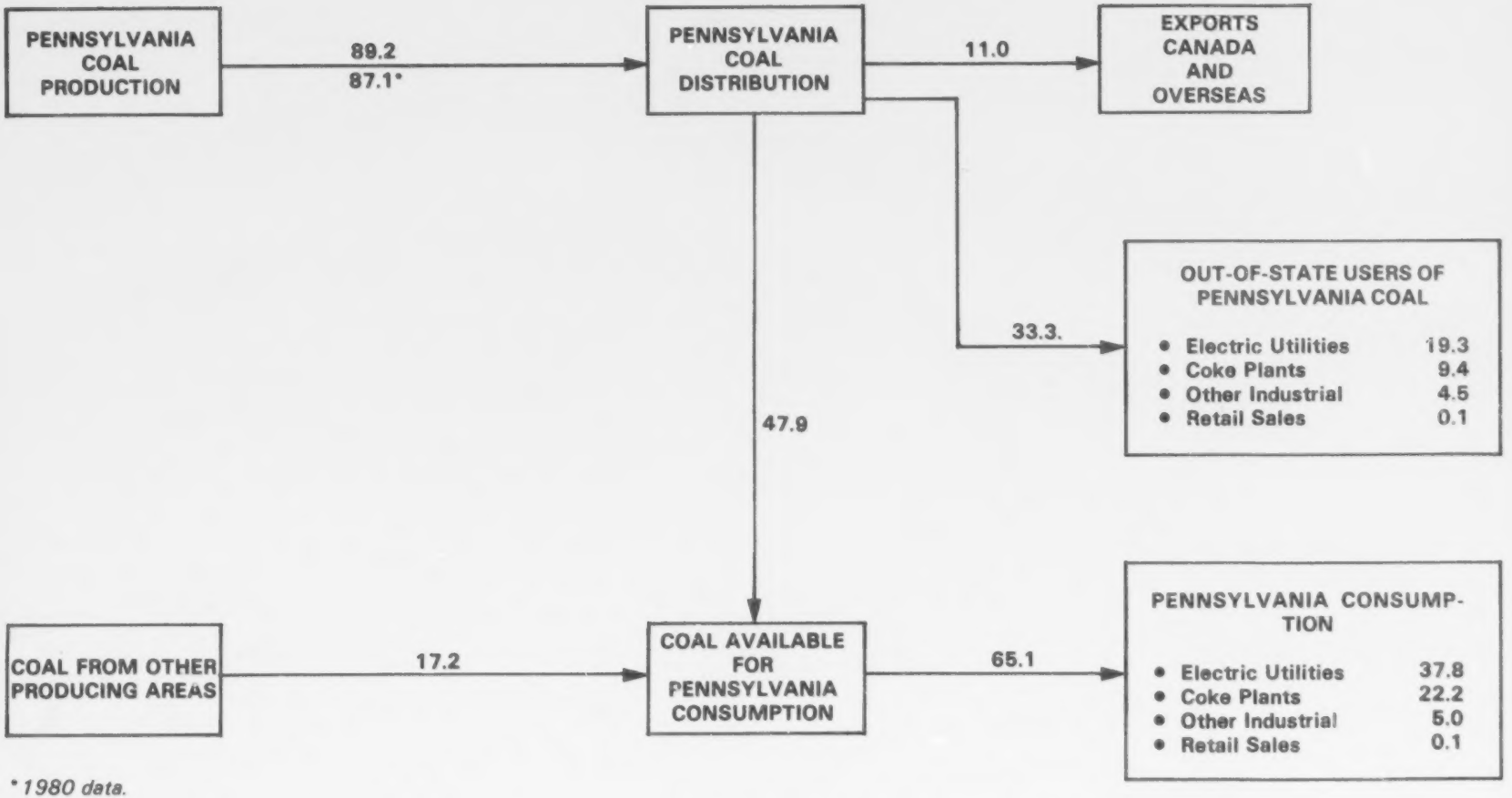
* *1980 data.*
\+ *Includes 0.3 million short tons shipped to U.S. Armed Forces.*
‡ *Includes consumption of anthracite at U.S. coke plants.*

Note: Totals may not add due to rounding.

Sources: U.S. Department of Energy, Energy Information Administration, *Weekly Coal Production; Coal Data: A Reference; State Energy Data Report,* September 1981.

PENNSYLVANIA BITUMINOUS COAL FLOWS, 1979

(Million short tons)



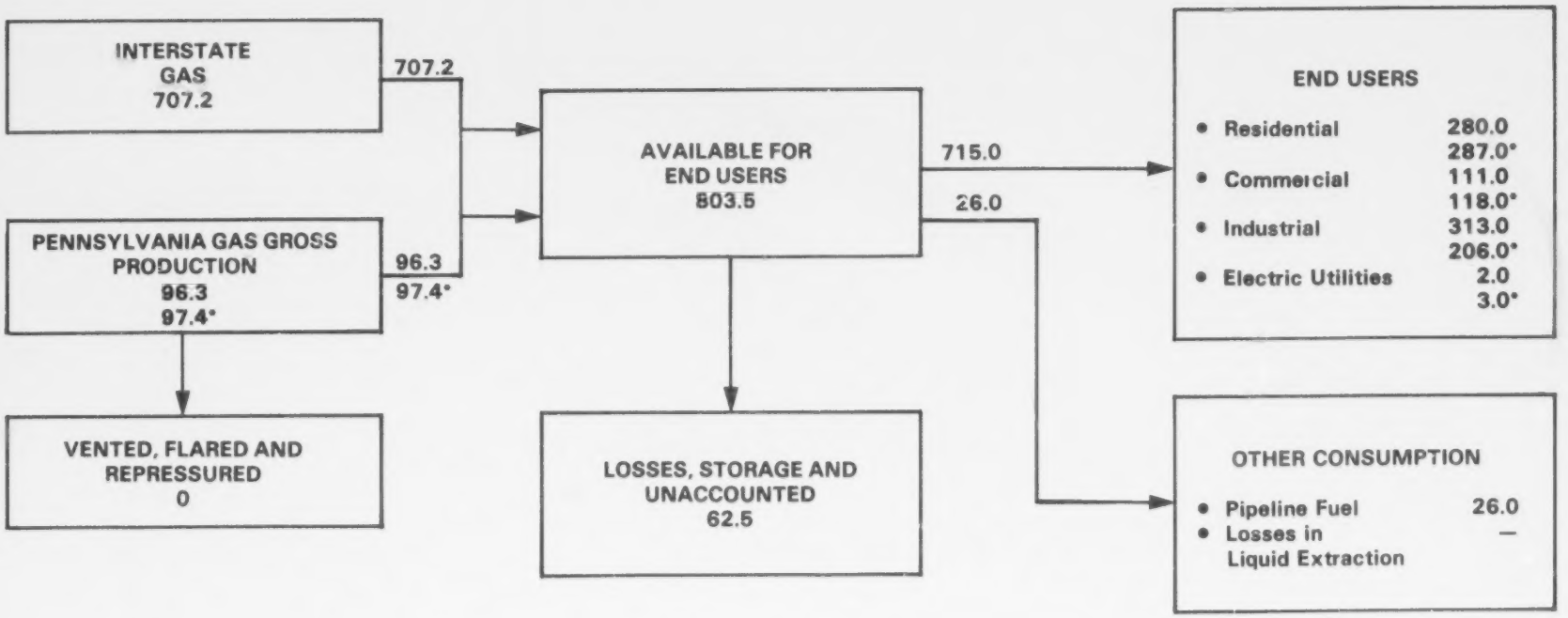
**1980 data.*

Note: Totals may not add because they take into account coal distribution to and from coal producing districts 1 and 2 which include mainly Pennsylvania coal mines, but also some in Maryland and West Virginia.

Sources: Pennsylvania Department of Environmental Resources, *Annual Report on Mining, Oil and Gas, and Land Reclamation and Conservation Activities,* 1979.

U.S. Department of Energy, Energy Information Administration, *Bituminous and Subbituminous Coal and Lignite Distribution,* Calendar Year 1979.

PENNSYLVANIA GAS FLOWS, 1979
(All Volumes are BCF)

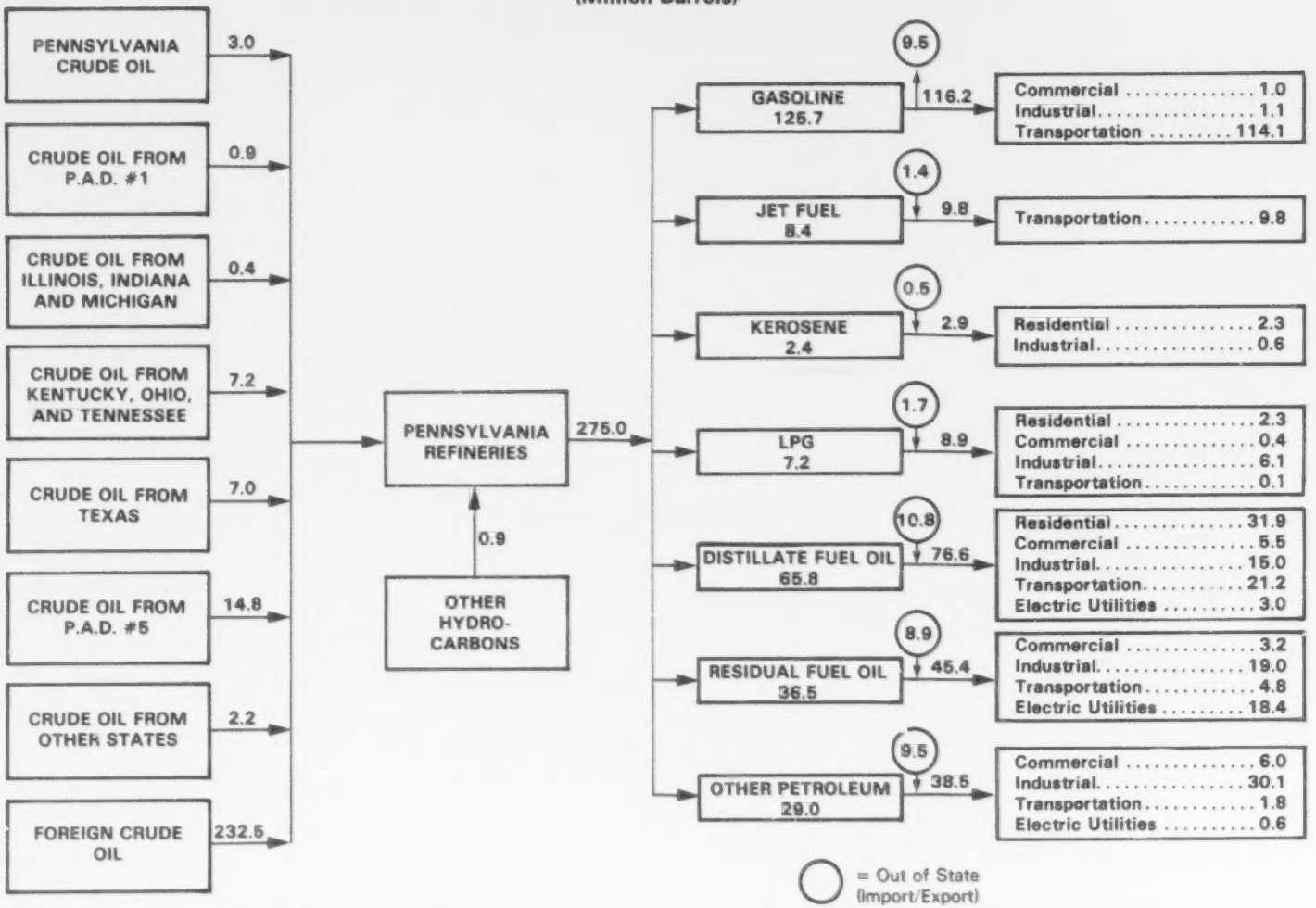


**1980 data.*

Sources: U.S. Department of Energy, Energy Information Administration, *Natural Gas Production and Consumption,* 1979; *State Energy Data Report,* September 1981.
Pennsylvania Department of Commerce, Bureau of Statistics, Research an Planning, *1979 Statistics for Gas Utilities.* Pennsylvania Public Utility Series Release Number U-2-79.
Pennsylvania Oil and Gas Association.
American Gas Association, *Gas Facts,* 1980.

REFINERY INPUTS AND OUTPUTS IN PENNSYLVANIA, 1979

(Million Barrels)



Note: Totals may not add due to rounding.

Sources: U.S. Department of Energy, Energy Administration, *Crude Petroleum, Petroleum Products, and Natural Gas Liquids: 1979; State Energy Data Report,* September 1981; *Refinery Input/Output for Pennsylvania — 1979* (computer printout).

SECTION TWO

PENNSYLVANIA ENERGY CONSUMPTION BY FUEL AND SECTOR, 1960-1979

This section presents primary and net consumption of energy in Pennsylvania by fuel type and sector from 1960 through 1979. The 1980 data is recorded where available.

Primary consumption of energy is shown by fuel type in physical units and in trillion Btu. Total primary consumption for each major consuming sector (residential, commercial, industrial, transportation and electric utility) is presented for the same period. All tables displaying primary energy consumption exclude non-energy petroleum products (asphalt, lubricants, road oil and other miscellaneous petroleum products). These can be found in Appendix A.

Data presented on sales of electricity have been compiled from annual statistical reports received from the Edison Electric Institute for the period 1960 through 1980. For purposes of reporting sales of electricity by sector, several classes of service as indicated by EEI have been incorporated into the commercial sector.

Electricity sales are combined with the end-use consumption of coal, refined petroleum products, and natural gas to obtain total net energy consumption in the residential, commercial, industrial and transportation sectors.

Finally, this section includes consumption data of Pennsylvania anthracite by consumer category for the same twenty-year period, plus 1980.

PRIMARY CONSUMPTION OF ENERGY BY FUEL, 1960-1979
PENNSYLVANIA

	Total Coal[1]		Natural Gas		Hydro-Electric Power[2]		Nuclear Power		Petroleum[3]		Total Primary Consumption	Change From Previous Year
Year	Trillion Btu	Thousand Tons	Trillion Btu	Billion Cubic Feet	Trillion Btu	Million Kwh	Trillion Btu	Million Kwh	Trillion Btu	Thousand Barrels	Trillion Btu	Percent
1960	1,529.4	58,486	540.1	522	19.6	1,826	2.7	230	1,017.3	180,242	3,109.1	—
1961	1,433.3	54,850	547.7	529	15.9	1,489	3.5	305	990.8	176,082	2,991.2	−3.8
1962	1,476.6	56,596	568.7	550	16.0	1,519	3.7	320	1,028.6	182,530	3,093.6	+3.4
1963	1,550.3	59,389	604.2	586	13.4	1,280	4.2	355	1,056.2	187,387	3,228.3	+4.4
1964	1,732.8	66,463	628.4	609	13.4	1,281	0.3	25	1,065.1	188,976	3,440.0	+6.6
1965	1,793.6	68,667	649.1	629	13.9	1,329	3.7	313	1,101.3	195,415	3,561.6	+3.5
1966	1,798.6	69,060	699.5	677	15.0	1,443	6.1	525	1,138.5	201,609	3,657.7	+2.7
1967	1,752.9	67,685	700.2	678	20.0	1,914	7.0	603	1,167.2	207,243	3,647.3	−0.3
1968	1,773.7	68,625	740.2	718	12.3	1,182	5.3	468	1,236.3	219,739	3,767.8	+3.3
1969	1,676.8	65,203	789.7	766	9.6	916	4.6	415	1,292.0	229,179	3,772.7	+0.1
1970	1,755.3	68,803	796.3	772	14.3	1,366	5.1	465	1,377.9	243,754	3,948.9	+4.7
1971	1,678.7	66,056	827.0	802	8.2	779	4.8	445	1,403.1	248,688	3,921.8	−0.7
1972	1,720.3	67,766	851.3	829	15.9	1,533	3.1	288	1,489.9	264,856	4,080.5	+4.0
1973	1,840.4	72,617	799.0	783	14.3	1,372	3.9	361	1,484.6	263,832	4,142.2	+1.5
1974	1,672.8	67,486	732.7	716	14.5	1,393	78.1	6,998	1,438.4	255,439	3,936.5	−5.0
1975	1,686.9	68,568	666.8	654	16.4	1,576	174.8	15,869	1,324.2	236,999	3,869.1	−1.7
1976	1,709.2	69,078	727.1	714	14.7	1,416	181.4	16,425	1,466.6	261,893	4,099.0	+5.9
1977	1,565.7	64,145	681.0	668	12.6	1,205	191.9	17,821	1,552.9	276,394	4,004.1	−2.3
1978	1,537.8	62,906	684.6	674	7.9	760	240.5	22,329	1,545.2	275,366	4,016.0	+0.3
1979	1,719.9	70,176	754.2	741	12.8	1,222	202.4	18,796	1,447.6	259,964	4,136.9	+3.0
1980[4]	NA	NA	728.4	713	NA	NA	NA	NA	NA	NA	NA	—

[1] *Includes anthracite, bituminous and lignite.*

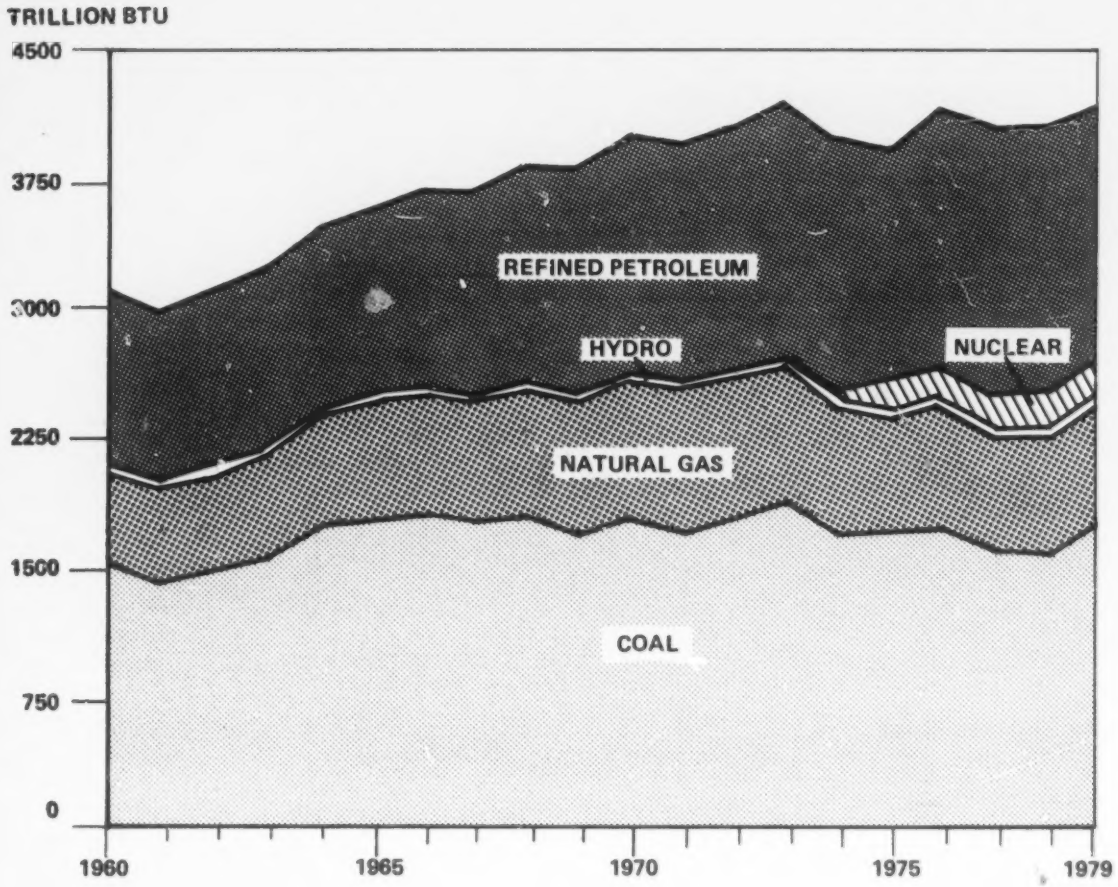
[2] *Includes industrial and utility production, and net imports of electricity.*

[3] *Excludes non-energy petroleum products. See Appendix A.*

[4] *Preliminary.*

Source: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September, 1981.
American Gas Association, *Gas Facts*, 1980.

PRIMARY CONSUMPTION OF ENERGY BY FUEL, 1960-1979
PENNSYLVANIA



Total primary consumption of energy has increased at a compound annual rate of 1.5 percent between 1960 and 1979.

Primary consumption, however, peaked in 1973 at 4,142.2 TBtu and has decreased by 0.02 percent annually over the 1973-1979 period although increases in 1976, 1978 and 1979 were experienced.

Petroleum consumption peaked in 1977 at 1,552.9 TBtu. In 1972, maximum natural gas consumption occurred at 851.3 TBtu. Coal consumption peaked at 1,840.4 TBtu in 1973.

Energy sources as shares of total primary consumption from 1960 to 1979 are as follows: petroleum's share grew from 32.7 percent in 1960 to 35.0 percent in 1979; coal decreased from a 49.2 percent share to a 41.6 percent share; natural gas increased from 17.4 percent to 18.2 percent; hydroelectricity decreased from 0.6 percent to 0.3 percent; and nuclear power grew from a negligible share in 1960 to a 4.9 percent share by 1979.

PRIMARY CONSUMPTION OF REFINED PETROLEUM PRODUCTS, 1960-1979
PENNSYLVANIA

	Distillate		Residual		Motor Gasoline		Kerosene		Aviation Fuels[1]		LPG[2]		Total[3]	
Year	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels
1960	272.3	46,744	273.0	43,422	430.3	81,912	19.9	3,508	12.8	2,423	9.0	2,233	1,017.3	180,242
1961	269.2	46,214	247.6	39,379	426.8	81,244	20.5	3,616	16.9	3,192	9.8	2,437	990.8	176,082
1962	288.6	49,539	259.2	41,224	435.5	82,904	20.9	3,692	14.1	2,591	10.3	2,580	1,028.6	182,530
1963	300.8	51,642	265.8	42,277	441.2	83,989	20.7	3,644	16.3	2,988	11.4	2,847	1,056.2	187,387
1964	296.5	50,894	273.3	43,475	445.3	84,770	20.7	3,648	16.9	3,095	12.4	3,096	1,065.1	188,976
1965	314.8	54,046	272.7	43,383	457.5	87,096	21.8	3,851	23.0	4,162	11.5	2,877	1,101.3	195,415
1966	312.8	53,701	303.1	48,208	463.2	88,179	21.9	3,858	24.5	4,413	13.0	3,250	1,138.5	201,609
1967	328.4	56,384	284.2	45,204	482.6	91,866	25.9	4,573	34.1	6,084	12.0	3,132	1,167.2	207,243
1968	348.4	59,819	295.0	46,926	512.2	97,503	25.0	4,404	41.7	7,425	14.0	3,662	1,236.3	219,739
1969	353.4	60,665	329.7	52,445	518.2	98,653	24.8	4,372	50.1	8,890	15.8	4,154	1,292.0	229,179
1970	370.1	63,541	379.7	60,389	534.3	101,720	24.1	4,251	52.6	9,329	17.1	4,524	1,377.9	243,754
1971	368.3	63,221	377.1	59,973	563.9	107,344	26.7	4,711	49.5	8,782	17.6	4,657	1,403.1	248,688
1972	410.9	70,541	367.7	58,490	610.1	116,142	31.1	5,486	50.2	8,900	19.9	5,297	1,489.9	264,856
1973	411.4	70,635	373.3	59,371	603.3	114,856	22.5	3,975	53.5	9,483	20.6	5,512	1,484.6	263,832
1974	415.8	71,379	358.4	57,001	571.6	108,823	20.7	3,642	51.8	9,195	20.1	5,399	1,438.4	255,439
1975	386.0	66,262	276.6	43,997	571.3	108,766	19.3	3,398	49.4	8,753	21.6	5,823	1,324.2	236,999
1976	435.1	74,691	321.1	51,079	618.3	117,708	20.2	3,567	49.1	8,709	22.8	6,138	1,466.6	261,893
1977	453.4	77,830	379.7	60,387	631.7	120,263	14.5	2,551	49.4	8,773	24.2	6,590	1,552.9	276,394
1978	427.0	73,298	385.8	61,366	640.7	121,978	14.3	2,517	51.5	9,138	25.9	7,069	1,545.2	275,366
1979	445.8	76,526	285.2	45,362	610.2	116,157	16.7	2,937	57.0	10,108	32.7	8,874	1,447.6	259,964
1980[4]	398.1	68,337	218.5	34,762	587.9	111,913	15.7	2,763	NA	NA	NA	NA	NA	NA

[1] *Includes jet fuel and aviation gasoline.*

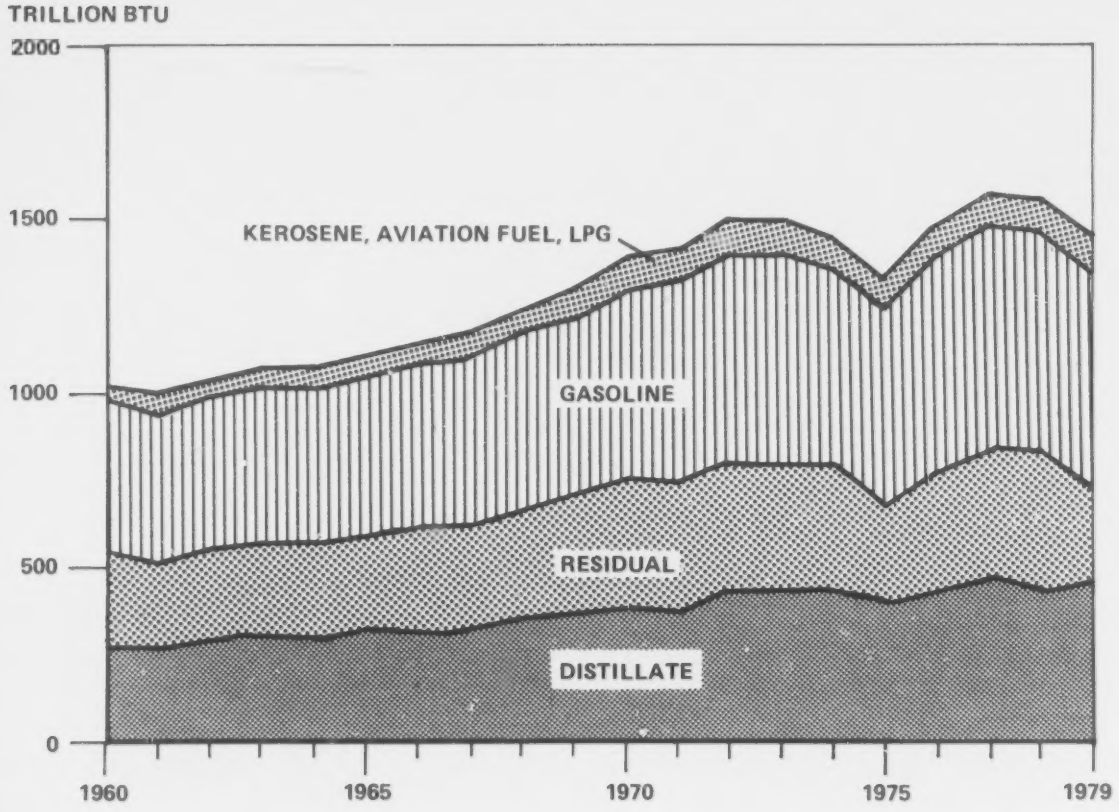
[2] *Liquefied petroleum gases include ethane, ethylene, propane, propylene, butane, butylene, butane-propane mixture, ethane-propane mixture, and isobutane.*

[3] *Excludes non-energy petroleum products. See Appendix A.*

[4] *Preliminary.*

Source: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981; *Deliveries of Fuel Oil and Kerosene in 1980*. American Petroleum Institute, *Basic Petroleum Data Book*, Vol. 1, No. 3.

PRIMARY CONSUMPTION OF REFINED PETROLEUM PRODUCTS, 1960-1979
PENNSYLVANIA



Petroleum product consumption increased at a compound annual rate of 1.9 percent from 1960 through 1979.

Motor gasoline consumption increased from 430.3 TBtu in 1960 to 610.1 TBtu in 1972 at a compound annual rate of 3.0 percent, declined through 1975, and then increased to 640.7 TBtu in 1978. Residual oil consumption peaked in 1978 at 385.8 TBtu at a compound annual rate of 1.9 percent per year. Distillate consumption rose from 272.3 TBtu in 1960 to a maximum of 453.4 TBtu in 1977 at a compound annual rate of 3.0 percent.

Total petroleum product consumption in 1979 was 6.3 percent less than in 1978. Residual and gasoline consumption declined by 26.1 percent and 4.8 percent, respectively. However, distillate consumption increased 4.4 percent for that year.

The residual share of total petroleum product consumption decreased from 26.8 percent in 1960 to 19.7 percent in 1979. The gasoline share remained relatively constant while that of distillate increased from 26.8 percent in 1960 to 30.8 percent in 1979. The aviation fuel share increased from 1.3 percent in 1960 to 3.9 percent in 1979.

PRIMARY CONSUMPTION OF ENERGY BY SECTOR, 1960-1979
PENNSYLVANIA
Trillion Btu

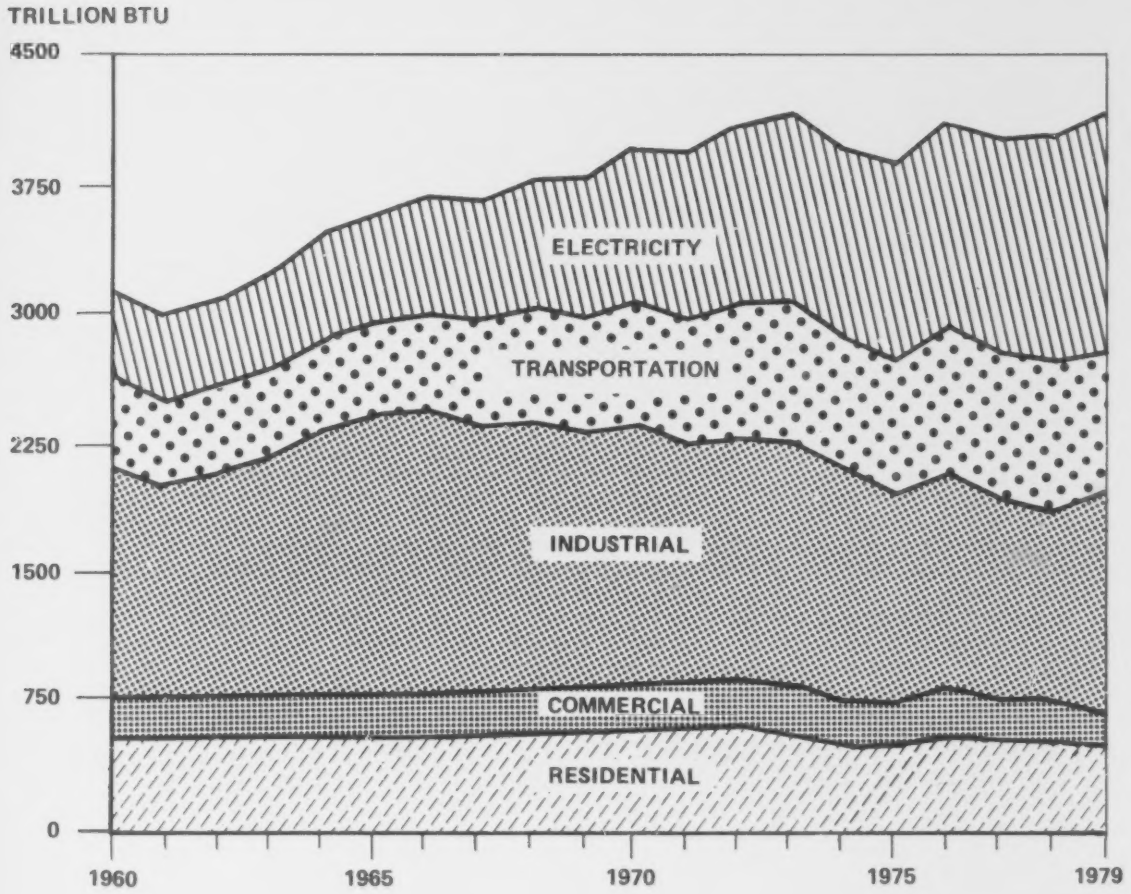
Year	Residential	Commercial	Industrial	Transportation	Electric Utilities	Total[1]
1960	526.3	255.5	1,318.6	517.2	491.6	3,109.1
1961	519.2	242.7	1,239.1	495.9	494.3	2,991.2
1962	539.9	243.1	1,279.5	512.4	519.0	3,093.6
1963	540.2	241.2	1,371.7	533.9	541.1	3,228.3
1964	536.1	249.1	1,521.4	546.9	586.6	3,440.0
1965	539.7	252.1	1,601.0	551.7	617.4	3,561.6
1966	547.4	248.8	1,624.3	578.7	658.5	3,657.7
1967	564.7	253.8	1,528.7	615.4	684.7	3,647.3
1968	572.6	253.8	1,538.2	664.5	738.7	3,767.8
1969	581.2	256.8	1,467.6	675.3	791.7	3,772.7
1970	589.8	275.8	1,492.8	705.5	885.0	3,948.9
1971	598.8	288.6	1,349.3	733.3	951.8	3,921.8
1972	604.7	302.0	1,355.6	785.2	1,033.1	4,080.5
1973	583.2	299.9	1,376.3	799.2	1,083.7	4,142.2
1974	531.9	256.9	1,308.9	766.9	1,072.1	3,936.5
1975	521.9	232.5	1,210.9	757.3	1,146.6	3,869.1
1976	559.4	268.5	1,248.3	827.0	1,195.8	4,099.0
1977	540.3	245.6	1,141.3	843.2	1,233.7	4,004.1
1978	534.2	241.1	1,090.0	854.7	1,296.0	4,016.0
1979	517.4	187.7	1,253.4	836.5	1,341.8	4,136.9

[1] *Excludes non-energy petroleum products, electricity sales, and electrical energy losses.*

Note: Totals may not equal sum of components due to independent rounding.

Source: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981.

PRIMARY CONSUMPTION OF ENERGY BY SECTOR, 1960-1979
PENNSYLVANIA



Primary consumption of energy by the electric utility sector increased at a compound annual rate of 5.4 percent from 1960 through 1979. Transportation consumption grew by 2.6 percent, while industrial consumption declined 0.3 percent annually for the same time period. Commercial and residential consumption also decreased at compound annual rates of 1.6 percent and 0.09 percent, respectively.

Utility consumption increased from 491.6 TBtu in 1960 to a maximum of 1,341.6 TBtu in 1979. Transportation consumption increased from 517.2 TBtu in 1960 to 799.2 TBtu in 1973, declined through 1975, and then increased to 854.7 TBtu in 1978. Commercial consumption peaked in 1972 at 302.0 TBtu and has declined since then at a compound annual rate of 6.6 percent to 187.7 TBtu in 1979. Residential consumption also peaked in 1972 at 604.7 TBtu and then decreased at a compound annual rate of 2.2 percent to 517.4 TBtu in 1979.

In 1960 the residential, commercial, industrial, transportation and electric utility sectors represented 16.9 percent, 8.2 percent, 42.4 percent, 16.6 percent, and 15.8 percent of total primary energy consumption, respectively. In 1979, the shares were 12.5, 4.5, 30.3, 20.2, and 32.4 percent, respectively.

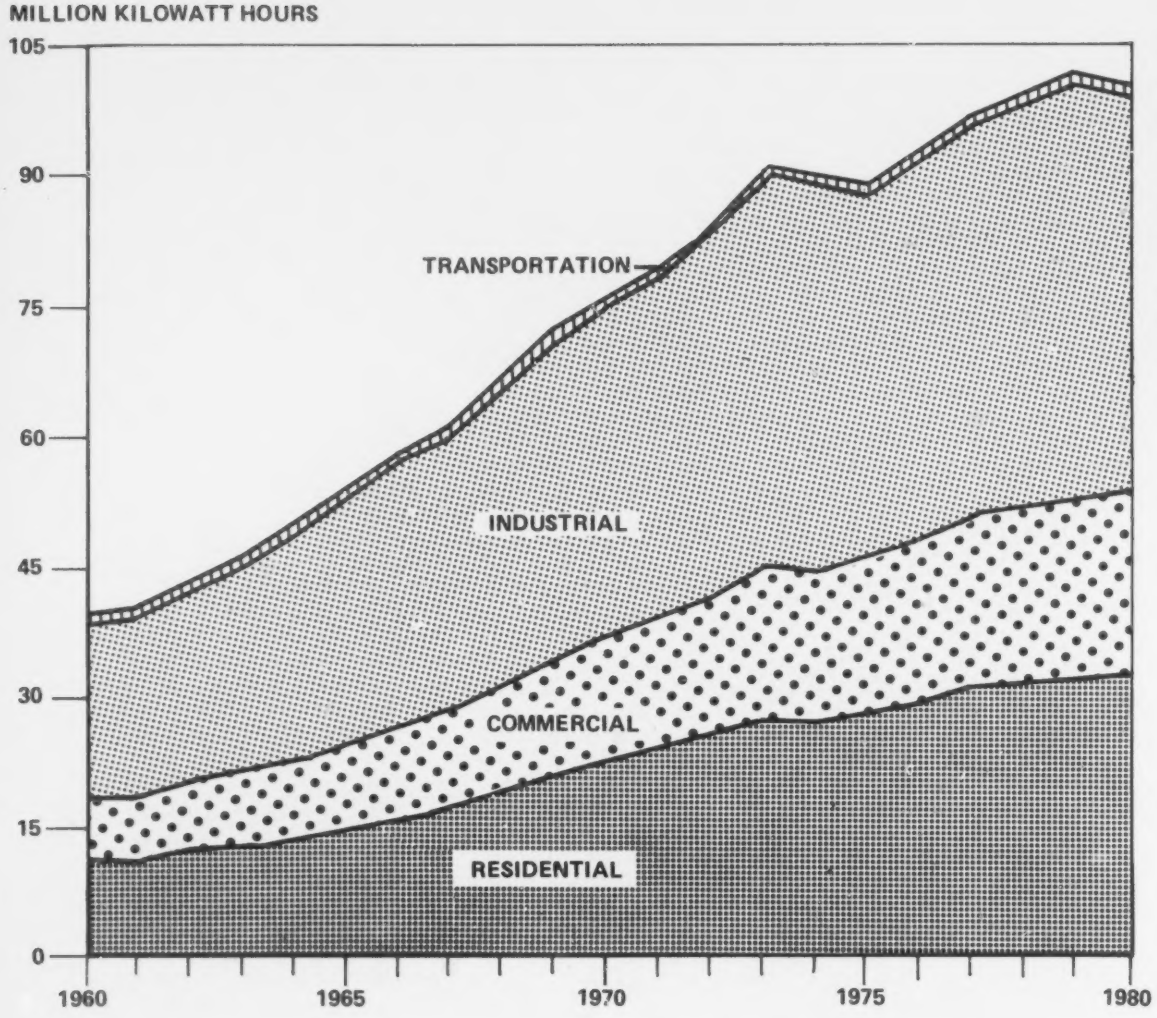
SALES OF ELECTRICITY BY SECTOR, 1960-1980
PENNSYLVANIA
Million Kwh

Year	Residential	Commercial[1]	Industrial	Transportation	Total
1960	11,042	7,006	20,151	1,081	39,280
1961	11,021	7,404	20,515	1,067	40,007
1962	12,122	7,971	22,163	1,106	43,362
1963	12,749	8,405	23,792	1,085	46,031
1964	13,496	8,966	26,374	1,101	49,937
1965	14,535	9,682	28,343	1,075	53,635
1966	15,686	10,532	30,734	1,039	57,991
1967	17,003	11,105	31,480	978	60,566
1968	18,739	12,164	34,296	934	66,133
1969	20,467	13,121	37,201	942	71,731
1970	22,376	14,235	38,140	916	75,667
1971	23,651	15,231	38,962	877	78,721
1972	24,954	16,285	41,676	874	83,789
1973	26,713	17,503	45,118	853	90,187
1974	26,673	17,246	44,786	916	89,621
1975	27,724	18,097	41,317	915	88,053
1976	28,790	18,841	43,366	964	91,961
1977	30,346	19,758	44,855	1,029	95,988
1978	30,961	20,233	45,971	968	98,133
1979	31,546	20,546	47,911	914	100,917
1980	31,831	21,179	45,942	824	99,776

[1] *Includes sales figures for four user sectors: commercial (small light and power), street and highway lighting, other public authorities and interdepartmental.*

Source: Edison Electric Institute, *Statistical Year Book,* (1960-1980).

SALES OF ELECTRICITY BY SECTOR, 1960-1980
PENNSYLVANIA



Total sales of electricity increased at a compound annual rate of 5.1 percent between 1960 and 1979 despite decreases in 1974 and 1975, according to the Edison Electric Institute's Statistical Year Book. Residential and commercial sales increased by 5.7 percent and 5.8 percent, respectively, during this period. Industrial sales increased by 4.7 percent while electric sales to the transportation sector decreased by 0.9 percent.

Residential and commercial sales represented 28.1 percent and 17.8 percent, respectively, of total electricity sales in 1960, while in 1979 they represented 31.2 percent and 20.4 percent. Industrial sales constituted 51.3 percent in 1960 and 47.5 percent in 1979. Transportation's share declined from 2.8 percent in 1960 to 0.9 percent in 1979.

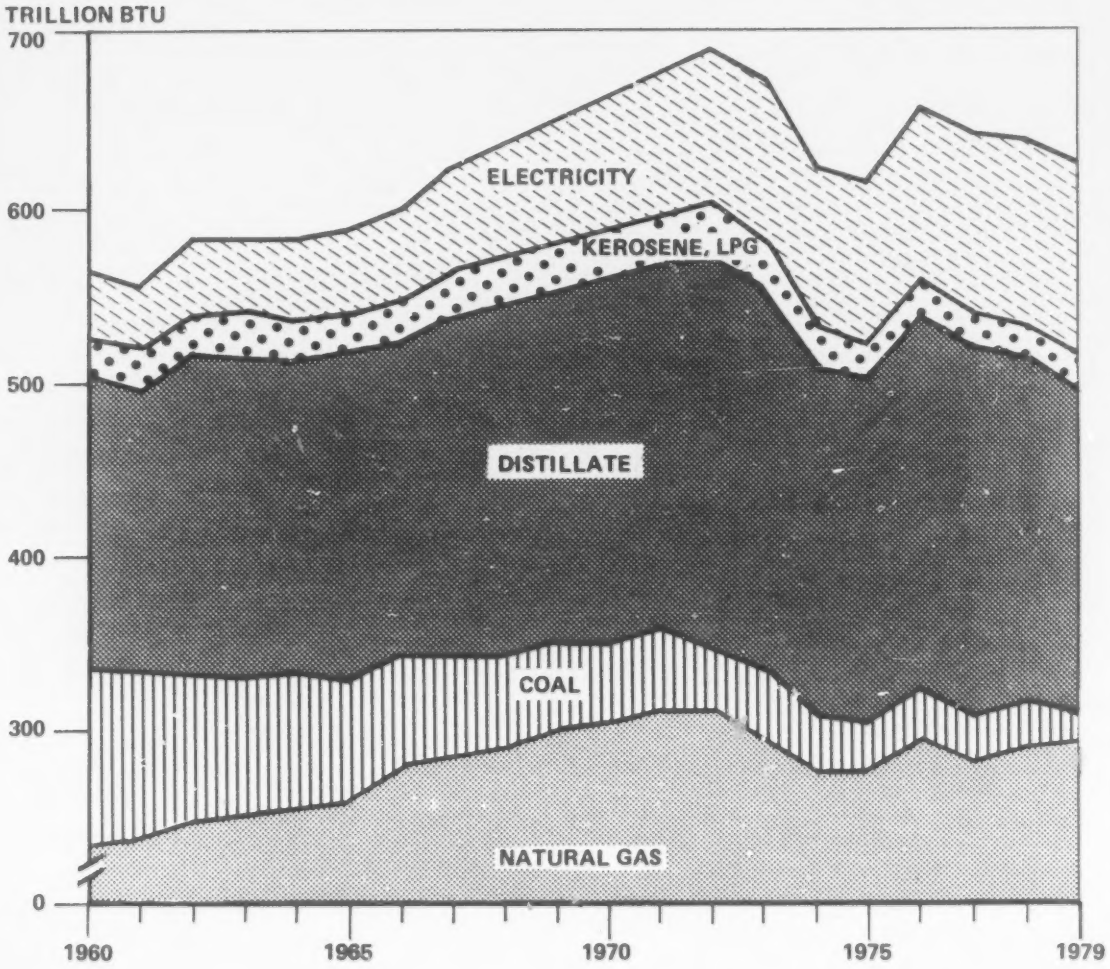
NET CONSUMPTION OF ENERGY BY THE RESIDENTIAL SECTOR, 1960-1979
PENNSYLVANIA

	Coal		Natural Gas		Refined Petroleum Products								Electricity		Total
					Distillate		Kerosene		LPG		Total				
Year	Trillion Btu	Thousand Tons	Trillion Btu	Billion Cubic Feet	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Million Kwh	Trillion Btu
1960	96.5	3,943	240.2	232	167.3	28,724	17.8	3,140	4.5	1,125	189.6	32,988	37.7	11,042	564.0
1961	88.3	3,593	245.6	237	162.8	27,949	17.9	3,150	4.6	1,152	185.3	32,251	37.6	11,021	556.8
1962	78.3	3,201	253.6	245	184.2	31,629	18.7	3,295	5.0	1,258	208.0	36,181	41.4	12,122	591.3
1963	72.8	3,015	258.0	250	185.5	31,850	18.4	3,249	5.5	1,371	209.4	36,469	43.5	12,749	583.7
1964	73.7	3,056	259.8	252	179.2	30,764	17.3	3,058	6.1	1,522	202.6	35,344	46.0	13,496	582.1
1965	66.1	2,727	263.8	256	186.7	32,048	17.7	3,128	5.4	1,348	209.8	36,523	49.6	14,535	589.3
1966	59.0	2,448	283.7	275	179.7	30,851	18.7	3,304	6.2	1,550	204.7	36,705	53.5	15,686	600.9
1967	53.3	2,255	288.8	280	194.2	33,345	22.8	4,022	5.5	1,445	222.6	38,811	58.0	17,003	622.7
1968	49.4	2,106	294.8	286	201.3	34,561	21.5	3,788	5.6	1,468	228.4	39,816	63.9	18,739	636.5
1969	46.1	1,968	304.2	295	202.0	34,679	22.2	3,914	6.7	1,771	230.9	40,364	69.8	20,467	651.0
1970	44.4	1,888	306.2	297	210.3	36,108	21.7	3,827	7.1	1,888	239.2	41,823	76.3	22,376	666.1
1971	44.5	1,879	313.8	304	209.9	36,037	23.5	4,147	7.0	1,865	240.5	42,049	80.7	23,651	679.5
1972	34.2	1,461	313.7	305	221.6	38,038	27.6	4,868	7.6	2,026	256.8	44,931	85.1	24,954	689.8
1973	37.3	1,506	298.4	293	219.2	37,622	20.8	3,673	7.6	2,016	247.5	43,312	91.1	26,713	674.3
1974	30.2	1,256	278.4	272	199.7	34,292	16.3	2,872	7.3	1,946	223.3	39,110	91.0	26,673	622.9
1975	26.8	1,122	278.1	273	196.2	33,674	13.0	2,299	7.8	2,109	217.0	38,082	94.6	27,724	616.5
1976	25.9	1,075	296.0	290	215.2	36,950	14.0	2,468	8.2	2,217	237.5	41,635	98.2	28,790	657.6
1977	25.8	1,032	282.6	277	211.6	36,332	11.8	2,087	8.5	2,300	231.9	40,718	103.5	30,346	643.8
1978	24.3	968	290.7	286	200.8	34,467	10.7	1,887	7.8	2,116	219.2	38,470	105.6	30,961	639.8
1979	16.5	657	293.8	289	185.6	31,868	13.1	2,318	8.3	2,269	207.1	36,454	107.6	31,546	625.0
1980	NA	NA	293.4	287	161.4	27,710	14.5	2,555	NA	NA	NA	NA	108.6	31,831	NA

Note: Totals may not equal sum of components due to independent rounding.

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981; *Deliveries of Fuel Oil and Kerosene in 1980.*
Edison Electric Institute, *Statistical Year Book*, (1960-1980).
American Gas Association, *Gas Facts*, 1980.

NET CONSUMPTION OF ENERGY BY THE RESIDENTIAL SECTOR, 1960-1979
PENNSYLVANIA



Residential net consumption of energy increased at a compound annual rate of 0.5 percent between 1960 and 1979. Maximum net consumption occurred in 1972 at 689.8 TBtu and has declined at a compound annual rate of 1.4 percent from 1972 to 1979.

Petroleum consumption peaked in 1972 at 256.8 TBtu and has declined at a compound annual rate of 3.0 percent from 1972 to 1979. Maximum natural gas consumption also occurred in 1972, and has declined at a compound annual rate of 0.9 percent from 1972 to 1979, despite increases in 1976, 1978 and 1979. Coal consumption decreased at a compound annual rate of 8.9 percent between 1960 and 1979, despite slight increases in 1964 and 1973. Electricity sales increased from 37.7 TBtu in 1960 to 107.6 TBtu in 1979 at a compound annual rate of 5.7 percent.

In the residential sector, the use of coal fell from 17.1 percent in 1960 to 2.7 percent in 1979, petroleum decreased from 33.6 percent to 33.1 percent and natural gas went from 42.6 percent to 47.0 percent. The use of electricity expanded steadily, moving from 6.7 percent to 17.2 percent.

NET CONSUMPTION OF ENERGY BY THE COMMERCIAL SECTOR, 1960-1979
PENNSYLVANIA

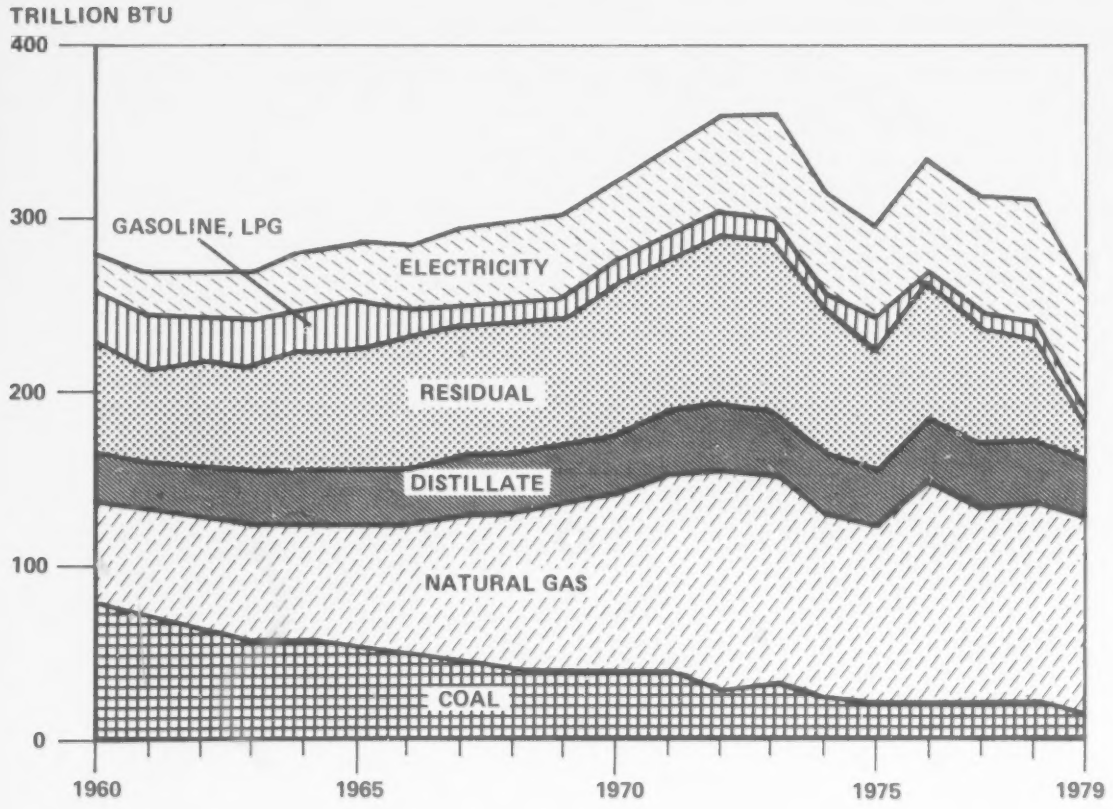
	Coal		Natural Gas		Refined Petroleum Products										Electricity		Total
					Distillate		Residual		Motor Gasoline		LPS		Total				
Year	Trillion Btu	Thousand Tons	Trillion Btu	Billion Cubic Feet	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Million Kwh	Trillion Btu
1960	78.2	3,147	58.1	56	29.1	4,994	63.5	10,100	25.8	4,904	0.8	198	119.2	20,196	23.9	7,006	279.4
1961	71.2	2,853	60.9	59	28.3	4,859	52.5	8,355	29.0	5,529	0.8	203	110.6	18,946	25.3	7,404	268.0
1962	63.7	2,563	64.0	62	32.0	5,499	58.6	9,328	23.9	4,549	0.9	222	115.4	19,598	27.2	7,971	270.3
1963	58.2	2,371	66.0	64	32.3	5,537	59.3	9,432	24.4	4,652	1.0	242	117.0	19,863	28.7	8,405	269.9
1964	57.1	2,335	66.8	65	31.2	5,348	68.3	10,862	24.6	4,678	1.1	269	125.2	21,157	30.6	8,966	279.7
1965	52.9	2,148	69.7	68	32.5	5,571	71.2	11,327	24.8	4,730	1.0	238	129.5	21,866	33.0	9,682	285.1
1966	48.4	1,971	76.2	74	31.2	5,363	77.7	12,356	14.2	2,707	1.1	274	124.2	20,700	35.9	10,532	284.7
1967	43.7	1,808	85.3	83	33.8	5,797	77.0	12,255	13.0	2,474	1.0	255	124.8	20,781	37.9	11,105	291.7
1968	39.9	1,663	90.3	88	35.0	6,008	74.9	11,907	12.7	2,413	1.0	259	123.6	20,587	41.5	12,164	295.3
1969	37.4	1,560	98.7	96	35.1	6,029	71.5	11,378	12.9	2,449	1.2	313	120.7	20,169	44.8	13,121	301.6
1970	37.4	1,543	102.4	99	36.6	6,277	85.2	13,550	12.9	2,455	1.3	333	136.0	22,615	48.6	14,235	324.4
1971	37.3	1,534	113.4	110	36.5	6,265	89.1	14,180	11.1	2,110	1.2	329	137.9	22,884	52.0	15,231	340.6
1972	27.6	1,152	125.8	123	38.5	6,613	96.1	15,284	12.7	2,414	1.3	357	148.6	24,668	55.6	16,285	357.6
1973	32.7	1,295	118.6	116	38.1	6,541	99.4	15,807	9.8	1,874	1.3	356	148.6	24,578	59.7	17,503	359.6
1974	24.3	997	105.0	102	34.7	5,961	84.7	13,465	6.9	1,316	1.3	343	127.6	21,085	58.8	17,246	315.7
1975	21.4	885	101.0	99	34.1	5,854	67.7	10,771	6.9	1,310	1.4	372	110.1	18,307	61.7	18,097	294.2
1976	20.8	854	126.9	125	37.4	6,424	76.9	12,239	5.0	961	1.5	391	120.8	20,015	64.3	18,841	332.8
1977	20.2	805	114.0	112	36.8	6,316	66.8	10,624	6.3	1,205	1.5	406	111.4	18,551	67.4	19,758	313.0
1978	24.2	982	112.4	111	34.9	5,992	66.0	9,545	8.2	1,564	1.4	373	104.5	17,474	69.0	20,233	310.1
1979	15.2	605	113.5	111	32.3	5,540	20.1	3,200	5.1	975	1.5	400	59.0	10,115	70.1	20,546	257.8
1980	NA	NA	120.4[1]	118[1]	34.0	5,831	9.6	1,524	NA	NA	NA	NA	NA	NA	72.2	21,179	NA

[1] *Includes commercial, government and other federal buildings.*

Note: Totals may not equal sum of components due to independent rounding.

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981; *Deliveries of Fuel Oil and Kerosene in 1980.*
Edison Electric Institute, *Statistical Year Book*, (1960-1980).
American Gas Association, *Gas Facts*, 1980.

NET CONSUMPTION OF ENERGY BY THE COMMERCIAL SECTOR, 1960-1979
PENNSYLVANIA



Net commercial consumption of energy peaked in 1973 at 359.6 TBtu and has decreased at a compound annual rate of 5.4 percent since 1973 to 257.8 TBtu in 1979.

Maximum petroleum consumption occurred in 1972 at 148.6 TBtu and has declined by 12.4 percent annually since 1972 to 59.0 TBtu in 1979. Natural gas consumption increased from 58.1 TBtu in 1960 to 125.8 TBtu in 1972, declined through 1975, and then peaked at 126.9 TBtu in 1976. It has declined by 3.7 percent annually through 1979. Coal consumption decreased from 1960 through 1979 at a compound annual rate of 8.3 percent, despite increases in 1973 and 1978. Electricity sales increased at a compound annual rate of 5.8 percent between 1960 and 1979.

Patterns of energy usage in the commercial sector between 1960 and 1979 constituted increased shares of electricity from 8.6 percent to 27.2 percent, petroleum dropped from 42.6 percent to 22.9 percent, natural gas claimed 20.8 percent in 1960 and 44.0 percent in 1979, and coal decreased from 28.0 percent to 5.9 percent.

NET CONSUMPTION OF ENERGY BY THE INDUSTRIAL SECTOR, 1960-1979
PENNSYLVANIA

	Coal		Natural Gas		Refined Petroleum Products												Hydro Electric Power		Electricity		Total
					Distillate		Residual		Motor Gasoline		Kerosene		LPG		Total[1]						
Year	Trillion Btu	Thousand Tons	Trillion Btu	Billion Cubic Feet	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Million Kwh	Trillion Btu	Million Kwh	Trillion Btu
1960	898.7	33,882	220.0	213	29.8	5,112	156.7	24,928	7.5	1,437	2.1	368	3.6	896	199.7	32,741	0.2	16	68.8	20,151	1,387.4
1961	820.0	30,944	225.4	218	30.1	5,168	148.1	23,564	8.4	1,594	2.6	465	4.3	1,069	193.5	31,860	0.2	17	70.0	20,515	1,309.1
1962	853.5	32,218	233.5	226	30.6	5,245	146.6	23,314	8.5	1,626	2.3	398	4.3	1,081	192.3	31,864	0.2	15	75.6	22,163	1,355.1
1963	918.8	34,657	258.6	251	33.5	5,828	145.5	23,141	7.8	1,493	2.2	395	4.8	1,209	194.2	32,066	0.1	14	81.2	23,792	1,452.9
1964	1,051.5	39,627	278.2	270	33.3	5,718	142.3	22,637	7.9	1,498	3.3	588	5.1	1,273	191.9	31,714	0.2	15	90.0	26,374	1,611.4
1965	1,098.7	41,309	294.4	285	43.3	7,425	147.6	23,473	7.7	1,466	4.1	723	5.0	1,259	207.7	34,346	0.2	15	96.7	28,343	1,697.7
1966	1,095.0	41,163	316.7	307	45.7	7,850	150.7	23,975	7.3	1,382	3.1	554	5.6	1,388	212.4	35,159	0.2	18	104.9	30,734	1,729.2
1967	1,051.9	39,633	299.2	290	43.6	7,489	118.4	18,828	6.9	1,318	3.1	552	5.4	1,397	177.4	29,584	0.2	15	107.4	31,480	1,636.1
1968	1,039.8	39,106	326.3	316	36.2	6,222	118.1	18,791	6.9	1,322	3.5	617	7.3	1,904	172.0	28,856	0.1	14	117.0	34,296	1,655.2
1969	950.0	35,705	353.4	343	33.6	5,776	113.3	18,015	6.8	1,289	2.6	459	7.7	2,025	164.0	27,564	0.2	15	126.9	37,201	1,594.5
1970	981.2	36,780	350.5	340	25.9	4,450	118.0	18,768	6.2	1,181	2.4	424	8.5	2,244	161.0	27,067	0.1	12	130.1	38,140	1,622.9
1971	831.2	30,841	361.0	350	25.5	4,378	112.2	17,845	7.0	1,327	3.2	564	9.1	2,403	157.0	26,517	0.1	6	132.9	38,962	1,482.2
1972	817.0	30,484	377.9	368	27.3	4,684	113.1	17,990	6.1	1,153	3.5	618	10.7	2,848	160.7	27,293	*	1	142.2	41,676	1,497.8
1973	840.5	31,402	356.6	350	36.2	6,222	123.8	19,699	6.0	1,142	1.7	302	11.5	3,066	179.2	30,431	*	1	153.9	45,118	1,530.2
1974	786.3	30,576	319.9	312	43.6	7,492	127.3	20,251	6.1	1,167	4.4	770	11.3	3,034	192.7	32,714	*	1	152.8	44,786	1,462.8
1975	777.2	30,209	268.5	263	43.2	7,409	97.6	15,528	5.8	1,098	6.2	1,099	12.2	3,280	165.2	28,458	*	1	141.0	41,317	1,351.9
1976	772.8	29,978	281.8	277	53.3	9,157	115.6	18,383	5.7	1,093	6.2	1,099	12.8	3,462	193.7	33,210	*	1	148.0	43,366	1,396.3
1977	656.6	26,134	260.4	256	65.5	11,241	136.7	21,745	5.4	1,022	2.6	485	14.0	3,812	224.3	38,287	*	0	153.0	44,855	1,294.3
1978	623.9	24,884	256.1	252	56.6	9,719	128.8	20,481	4.4	830	3.6	630	16.6	4,516	210.0	36,176	*	1	156.9	45,971	1,246.9
1979	696.7	27,796	318.3	313	87.3	14,993	119.2	18,952	5.8	1,108	3.5	619	22.8	6,143	238.4	41,815	*	1	163.5	47,911	1,416.9
1980	NA	NA	312.8	308	64.5	11,077	72.8	11,578	NA	NA	1.2	208	NA	NA	NA	NA	NA	NA	156.8	45,942	NA

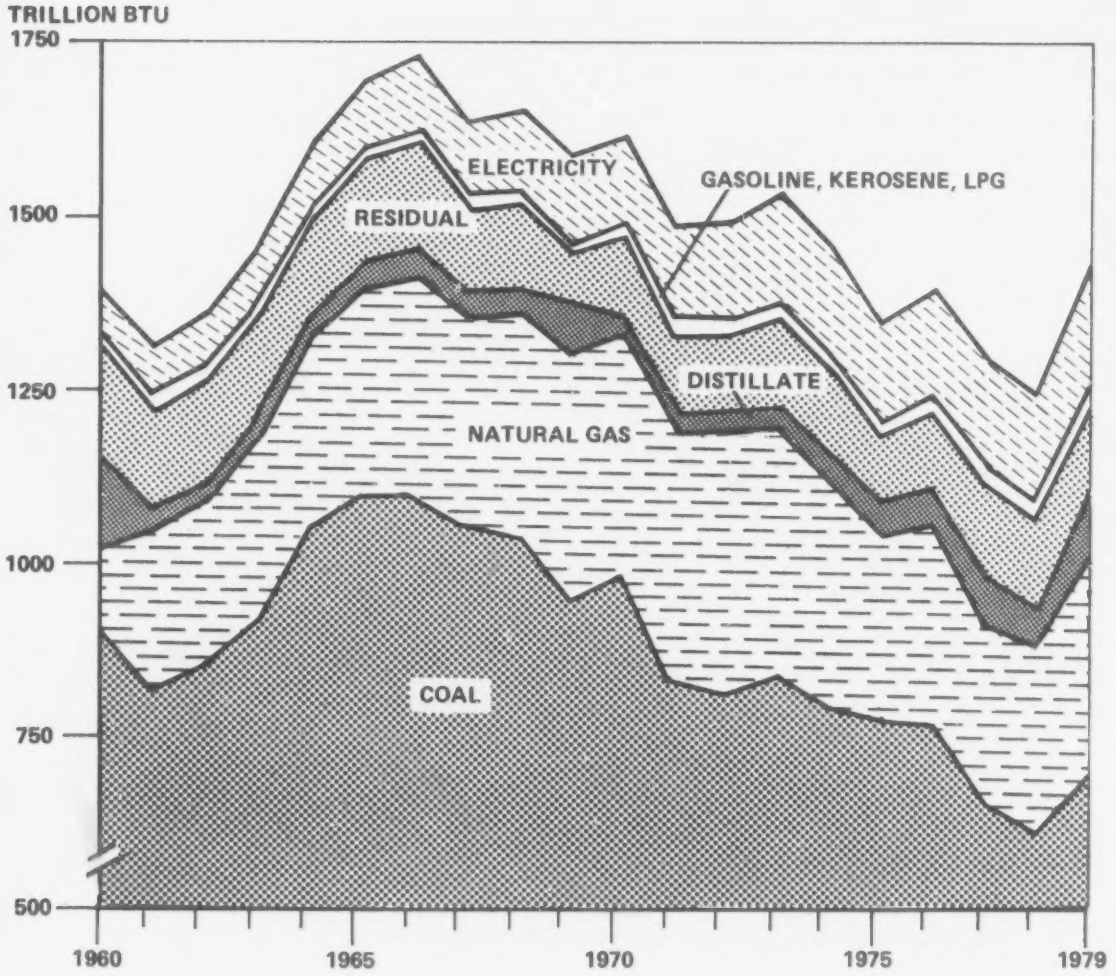
[1] *Totals include the following quantities of jet fuel consumption: 1975 — 0.2 TBtu, 44 thousand bbls.; 1976 — 0.1 TBtu, 16 thousand bbls.; 1977 — 0.1 TBtu, 12 thousand bbls.*

* *Represents small, non-zero value.*

Note: Totals may not equal sum of components due to independent rounding.

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September, 1981; *Deliveries of Fuel Oil and Kerosene in 1980.*
Edison Electric Institute, *Statistical Year Book*, (1960-1980).
American Gas Association, *Gas Facts*, 1980.

NET CONSUMPTION OF ENERGY BY THE INDUSTRIAL SECTOR, 1960-1979
PENNSYLVANIA



Net industrial consumption of energy peaked in 1966 at 1,729.2 TBtu and has decreased at a compound annual rate of 1.5 percent since 1966 to 1,416.9 TBtu in 1979.

Petroleum consumption increased from 199.7 TBtu in 1960 to 212.4 TBtu in 1966, declined through 1971, and then increased to 238.4 TBtu in 1979. Maximum natural gas consumption occurred in 1972 at 377.9 TBtu and has decreased by 2.4 percent annually through 1979. Coal usage peaked in 1965 at 1,098.7 TBtu and has declined by 3.2 percent per year through 1979. Electricity consumption increased by 4.7 percent annually between 1960 and 1979.

In 1979, the proportion of total net industrial consumption was greater for natural gas, petroleum and electricity than in 1960. The energy use pattern included a steadily increasing share of electricity (from 5.0 to 11.5 percent), an increasing natural gas share (from 15.8 to 22.5 percent), and an increasing petroleum share (14.4 percent in 1960 to 16.8 percent in 1979). Coal's share of net consumption declined from 64.8 percent in 1960 to 49.2 percent in 1979.

NET CONSUMPTION OF ENERGY BY THE TRANSPORTATION SECTOR, 1960-1979
PENNSYLVANIA

	Coal[1]		Natural Gas		Refined Petroleum Products												Electricity		Total
					Distillate		Residual		Motor Gasoline		Aviation Fuels[2]		LPG		Total				
Year	Trillion Btu	Thousand Tons	Trillion Btu	Billion Cubic Feet	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Million Kwh	Trillion Btu
1960	14.8	554	15.6	15	45.6	7,825	31.3	4,979	397.0	75,571	12.8	2,423	0.1	14	486.8	90,812	3.7	1,081	520.9
1961	3.6	133	13.1	13	47.5	8,154	25.3	4,024	389.4	74,123	16.9	3,192	0.1	14	479.2	89,507	3.6	1,067	449.5
1962	3.3	123	15.7	15	41.2	7,076	34.9	5,547	403.1	76,729	14.1	2,591	0.1	20	493.4	91,963	3.8	1,106	516.2
1963	3.3	123	17.4	17	48.6	8,346	39.3	6,254	408.9	77,843	16.3	2,988	0.1	28	513.2	95,457	3.7	1,085	537.6
1964	3.7	139	18.8	18	52.3	8,984	42.2	6,712	412.9	78,595	16.9	3,095	0.1	32	524.4	97,418	3.8	1,101	550.7
1965	3.5	129	20.0	19	51.9	8,916	28.2	4,486	425.0	80,900	23.0	4,162	0.1	33	528.2	98,497	3.7	1,075	555.4
1966	3.1	117	21.7	21	55.7	9,570	31.8	5,058	441.7	84,080	24.5	4,413	0.2	38	553.9	103,159	3.5	1,039	582.2
1967	2.4	91	24.4	24	56.3	9,662	35.4	5,629	462.7	88,074	34.1	6,084	0.1	34	588.6	109,483	3.3	978	618.7
1968	2.2	82	24.2	24	67.7	11,627	36.0	5,720	492.6	93,768	41.7	7,425	0.1	32	638.1	118,572	3.2	934	667.7
1969	1.5	58	26.0	25	70.5	12,109	28.4	4,510	498.6	94,914	50.1	8,890	0.2	44	647.8	120,467	3.2	942	678.5
1970	1.5	57	27.5	27	73.7	12,652	34.8	5,536	515.2	98,084	52.6	9,329	0.2	59	676.5	125,660	3.1	916	708.6
1971	1.1	39	28.8	28	70.8	12,150	37.1	5,902	545.8	103,906	49.5	8,782	0.2	60	703.4	130,802	3.0	877	736.3
1972	0.8	30	28.3	28	83.2	14,277	32.4	5,161	591.4	112,575	48.9	8,680	0.2	66	756.1	140,759	3.0	874	788.2
1973	0.6	22	22.8	22	95.4	16,375	40.0	6,361	587.5	111,839	52.6	9,325	0.3	73	775.8	143,973	2.9	853	802.1
1974	0.4	15	21.4	21	96.4	16,542	38.7	6,148	558.6	106,340	51.1	9,066	0.3	75	745.1	138,171	3.1	916	770.0
1975	0.1	5	18.1	18	94.1	16,162	37.4	5,953	558.7	106,358	48.7	8,630	0.2	62	739.1	137,165	3.1	915	760.4
1976	0.1	2	22.0	22	107.3	18,426	40.8	6,484	607.5	115,655	49.0	8,693	0.3	68	804.9	149,326	3.3	964	830.3
1977	*	2	23.7	23	109.5	18,804	40.3	6,409	620.0	118,036	49.4	8,761	0.3	72	819.5	152,082	3.5	1,029	846.7
1978	0.0	0	24.9	24	115.1	19,763	34.8	5,543	628.2	119,584	51.5	9,125	0.2	64	829.8	154,079	3.3	968	858.0
1979	0.0	0	26.7	26	123.2	21,154	30.2	4,808	599.2	114,074	57.0	10,108	0.2	63	809.8	150,207	3.1	914	839.6
1980	NA	NA	NA	NA	124.9	21,440	30.2	4,806	NA	NA	NA	NA	NA	NA	NA	NA	2.8	824	NA

[1] *No anthracite is consumed by the transportation sector.*

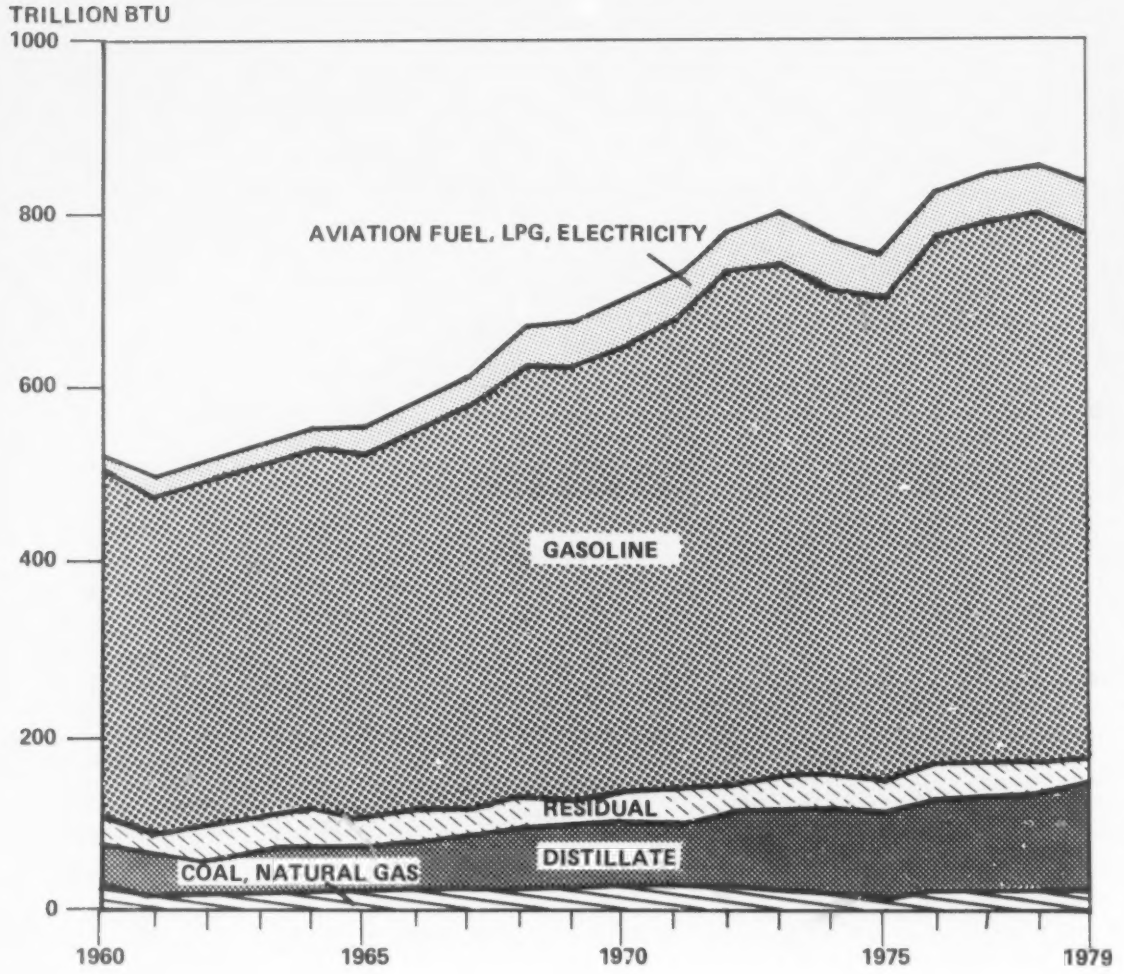
[2] *Includes jet fuel and aviation gasoline.*

* *Represents smaller, non-zero value.*

Note: Totals may not equal sum of components due to independent rounding.

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981; *Deliveries of Fuel Oil and Kerosene in 1980.* Edison Electric Institute, *Statistical Year Book*, (1960-1980).

NET CONSUMPTION OF ENERGY BY THE TRANSPORTATION SECTOR, 1960-1979
PENNSYLVANIA



Net consumption of energy by the transportation sector increased at a compound annual rate of 2.5 percent from 1960 to 1979.

Petroleum accounted for 93.5 percent of the sector's energy in 1960 and 96.5 percent in 1979.

Petroleum consumption increased at a compound annual rate of 3.0 percent from 1960 to the peak consumption level of 829.8 TBtu in 1978. Motor gasoline, which represents the largest portion of refined petroleum products consumed by the transportation sector, also reached its maximum in 1978. Gasoline consumption increased from 397.0 TBtu in 1960 to 628.2 TBtu in 1978, an increase of 2.6 percent annually for that time period. Aviation fuel consumption increased at 8.2 percent annually between 1960 and 1979.

Gasoline consumption represented 76.2 percent of total transportation requirements in 1960 and 71.4 percent in 1979. Aviation fuels constituted 2.5 percent of the total in 1960 and 6.8 percent in 1979. Distillate fuel oil represented 8.8 percent of the total consumption in 1960 and 14.7 percent in 1979. The residual fuel oil share was 6.0 percent in 1960 and 3.6 percent in 1979.

Coal consumption, which represented 2.8 percent of total net consumption in 1960, decreased from 14.8 TBtu in 1960 to 0.1 TBtu in 1976, and by 1979 there was no coal consumption by the transportation sector. Maximum natural gas consumption occurred in 1971 at 28.8 TBtu and has declined by 0.9 percent annually through 1979.

In 1960, natural gas and electricity represented 3.0 percent and 0.7 percent, respectively, of total net consumption by the transportation sector. In 1979 the respective shares were 3.2 percent and 0.4 percent.

PRIMARY CONSUMPTION OF ENERGY BY THE ELECTRIC UTILITY SECTOR, 1960-1979
PENNSYLVANIA

	Coal		Natural Gas		Hydro-Electric Power[1]		Nuclear Power		Refined Petroleum Products — Distillate		Refined Petroleum Products — Residual		Refined Petroleum Products — Total[2]		Total
Year	Trillion Btu	Thousand Tons	Trillion Btu	Billion Cubic Feet	Trillion Btu	Million Kwh	Trillion Btu	Million Kwh	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu	Thousand Barrels	Trillion Btu
1960	441.3	18,062	6.2	6	19.5	1,810	2.7	230	0.5	90	21.5	3,415	22.0	3,506	491.6
1961	450.2	18,348	2.7	3	15.7	1,472	3.5	305	0.5	84	21.6	3,436	22.1	3,520	494.3
1962	477.8	19,423	2.0	2	15.9	1,504	3.7	320	0.5	90	19.1	3,034	19.6	3,125	519.0
1963	497.2	20,138	4.2	4	13.3	1,266	4.2	355	0.5	81	21.7	3,450	22.2	3,530	541.1
1964	547.2	22,154	4.9	5	13.3	1,267	0.3	25	0.5	79	20.5	3,[illegible]	21.0	3,343	586.6
1965	572.5	23,182	1.3	1	13.7	1,313	3.7	313	0.5	87	25.8	4,0[illegible]	26.3	4,185	617.4
1966	593.0	24,148	1.2	1	14.8	1,425	6.1	525	0.4	67	42.9	6,819	43.3	6,886	658.5
1967	601.6	24,637	2.5	2	19.8	1,899	7.0	603	0.5	92	53.4	8,493	53.9	8,585	684.7
1968	642.5	26,414	4.5	4	12.1	1,168	5.3	468	8.2	1,401	66.1	10,507	74.2	11,909	738.7
1969	641.7	26,473	7.4	7	9.4	902	4.6	415	12.1	2,073	116.6	18,541	128.6	20,614	791.7
1970	690.8	29,141	9.6	9	14.2	1,354	5.1	465	23.6	4,054	141.7	22,535	165.3	26,589	885.0
1971	764.7	32,238	10.0	10	8.1	772	4.8	445	25.6	4,391	138.6	22,046	164.2	26,347	951.8
1972	840.7	35,053	5.6	5	15.9	1,533	3.1	288	40.4	6,929	126.1	20,055	167.7	27,204	1,033.1
1973	929.4	38,794	2.6	3	14.2	1,371	3.9	361	22.6	3,875	110.0	17,504	133.5	21,537	1,083.7
1974	821.7	35,052	8.0	8	14.5	1,392	78.1	6,998	41.3	7,092	107.7	17,137	149.8	24,358	1,072.1
1975	861.5	36,659	1.2	1	16.4	1,575	174.8	15,869	18.4	3,163	73.8	11,745	92.7	14,987	1,146.6
1976	889.6	37,447	0.5	*	14.7	1,415	181.4	16,425	21.8	3,734	87.8	13,973	109.6	17,707	1,195.8
1977	863.1	36,451	0.3	*	12.6	1,205	191.9	17,821	29.9	5,136	135.9	21,609	165.8	26,745	1,233.7
1978	865.3	36,376	0.5	*	7.9	759	240.5	22,329	19.6	3,357	162.2	25,797	181.8	30,481	1,296.0
1979	991.5	41,448	1.9	2	12.7	1,221	202.4	18,796	17.3	2,971	115.7	18,402	133.0	21,998	1,341.6
1980	NA	NA	2.9	3	NA	NA	NA	NA	13.3	2,279	106.0	16,854	NA	NA	NA

[1] *Includes net imports of electricity.*

[2] *Totals include the following quantities of jet fuel consumption: 1972 — 1.2 TBtu, 220 thousand bbls.; 1973 — 0.9 TBtu, 158 thousand bbls.; 1974 — 0.7 TBtu, 129 thousand bbls.; 1975 — 0.4 TBtu, 79 thousand bbls.; 1978 — 0.1 TBtu, 13 thousand bbls.*

* *Represents small, non-zero value.*

Note: Totals may not equal sum of components due to independent rounding.

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981; *Deliveries of Fuel Oil and Kerosene in 1980.*
Edison Electric Institute, *Statistical Year Book*, (1960-1979).
American Gas Association, *Gas Facts*, 1980.

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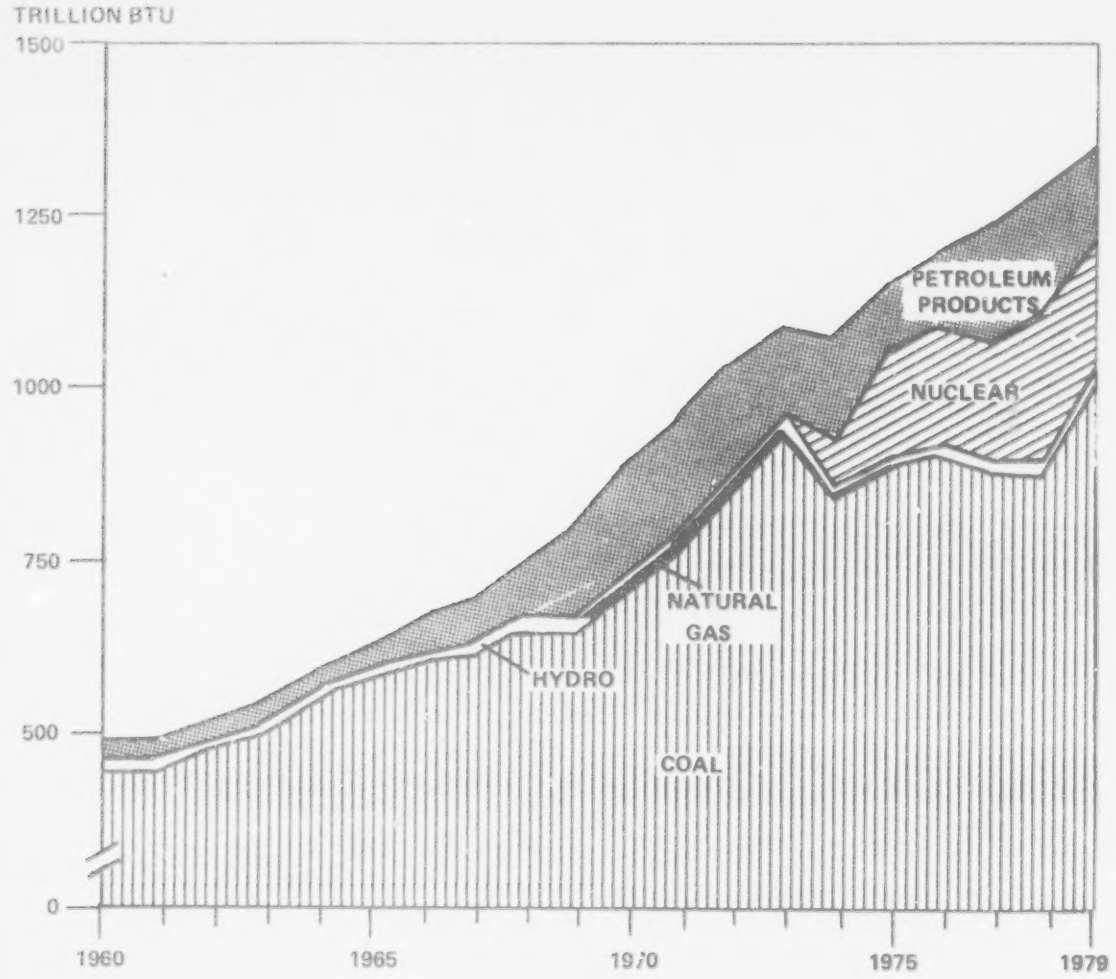
PRIMARY CONSUMPTION OF ENERGY BY THE ELECTRIC UTILITY SECTOR, 1960-1979
PENNSYLVANIA



Primary consumption of energy by electric utilities increased at a compound annual rate of 5.4 percent between 1960 and 1979. Coal consumption increased from 441.3 TBtu in 1960 to 929.4 TBtu in 1973 at a compound annual rate of 5.9 percent, then fluctuated over the next five years until it reached its maximum consumption level of 991.5 TBtu in 1979. Natural gas consumption peaked in 1971 at 10.0 TBtu and has declined since then at a compound annual rate of 18.7 percent to 1.9 TBtu in 1979. Hydro production decreased at a compound annual rate of 2.2 percent annually between 1960 and 1979. Nuclear production increased by 21.0 percent annually between 1974 and 1979.

Consumption patterns of electric utilities in 1979 were notably different than those in 1978. Coal usage increased by 126.2 TBtu or 14.6 percent. Natural gas usage increased by 1.4 TBtu — a change of 280 percent over 1978. Hydroelectricity production increased by 60.8 percent and nuclear electricity production decreased by 15.8 percent. Petroleum consumption was reduced by 26.8 percent or 48.8 TBtu.

The largest energy source consumed by electric utilities for the period 1960 through 1979 was coal — 89.7 percent in 1960, 73.9 percent in 1979. The share of natural gas fell from 1.3 percent to 0.1 percent and hydro power decreased from 4.0 percent to 1.0 percent. Increases occurred in petroleum, from 4.5 to 9.9 percent, and in nuclear power from a negligible share to 15.1 percent.

DOMESTIC CONSUMPTION OF ANTHRACITE, BY END-USE SECTOR, 1960-1980
Thousand Short Tons

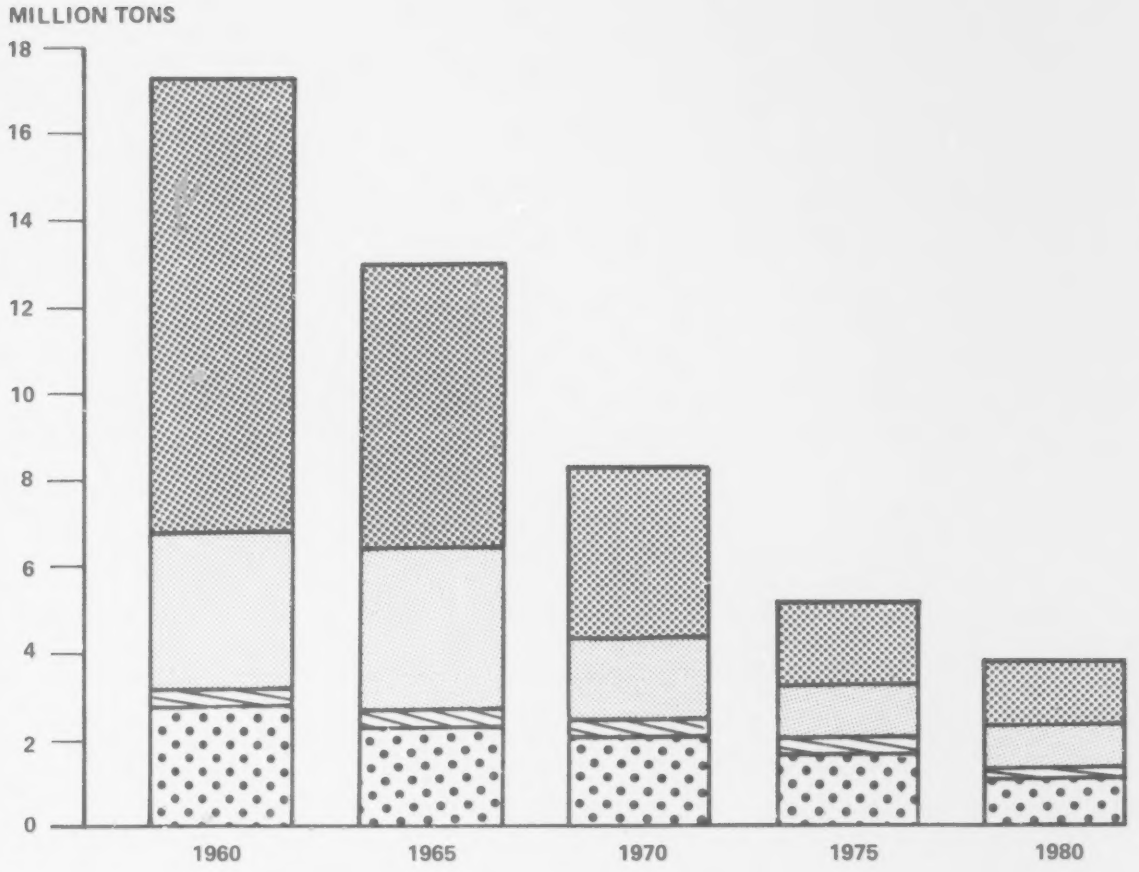
Year	Electric Utilities	Coke Plants	Other Industrial & Miscellaneous[1]	Residential & Commercial	Total
1960	2,751	370	3,611	10,543	17,275
1961	2,509	320	3,413	9,564	15,806
1962	2,297	420	3,201	8,328	14,246
1963	2,155	451	3,445	7,890	13,941
1964	2,239	492	4,119	7,550	14,400
1965	2,158	507	3,607	6,628	12,900
1966	2,192	515	3,071	5,622	11,400
1967	2,186	528	3,051	5,035	10,800
1968	2,203	532	2,666	4,759	10,160
1969	1,849	543	2,208	4,209	8,809
1970	1,897	472	1,837	4,042	8,248
1971	1,646	421	1,391	3,850	7,308
1972	1,584	474	897	2,960	5,915
1973	1,443	467	945	2,917	5,672
1974	1,498	444	929	2,577	5,448
1975	1,480	326	1,172	2,128	5,106
1976	1,350	380	1,294	2,016	5,040
1977	1,425	370	1,074	1,934	4,803
1978	1,084	316	918	1,597	3,895
1979	1,046	359	576	1,257	3,238
1980	951	167	1,025	1,528	3,671

[1] *Includes the iron and steel industry, cement plants and colliery fuel.*

Note: Totals may not equal sum of components due to independent rounding.

Sources: U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook*, "Coal-Pennsylvania Anthracite."
U.S. Department of Energy, Energy Information Administration, *Coal-Pennsylvania Anthracite*, annual; *Coal Data: A Reference; Weekly Coal Production.*

DOMESTIC CONSUMPTION OF ANTHRACITE, BY END-USE SECTOR, 1960-1980



Consumption of Pennsylvania anthracite decreased at a compound annual rate of 8.4 percent from 1960 through 1979.

Residential and commercial consumption fell from 10,543 to 1,257 thousand short tons from 1960 to 1979 at a compound annual rate of 10.6 percent. Other industrial and miscellaneous consumption peaked in 1964 at 4,119 thousand short tons and has declined by 12.3 percent annually through 1979 to 576 thousand short tons. Electric utility consumption decreased by 5.0 percent annually from 2,751 thousand short tons in 1960 to 1,046 thousand short tons in 1979. Anthracite consumption at coke plants declined by 0.2 percent per year during this period.

Domestic distribution of anthracite in 1979 totaled 3,238 thousand short tons or 67 percent of production. Two of the end-use sectors decreased their consumption of anthracite between 1960 and 1979. Residential and commercial customers represented 61.0 percent of total anthracite consumption in 1960 and 38.8 percent in 1979; and, other industrial users, the iron and steel industry, cement plants and mining operations represented 20.9 percent in 1960 and 17.8 percent in 1979. Electric utilities constituted 15.9 percent in 1960 and 32.3 percent in 1979. The share going to coke plants was 2.1 percent in 1960 and 11.1 percent in 1979.

SECTION THREE

SELECTED PENNSYLVANIA/ UNITED STATES COMPARISONS

This section presents a comparison of energy consumption patterns with those of the nation. The first table provides primary consumption by fuel in physical units and trillion Btu for 1979.

Following the tabular data, graphs are presented which compare 1979 primary consumption by fuel and by sector, petroleum consumption by product and by sector, natural gas and coal consumption by sector, electricity sales by sector, and primary consumption by the electric utilities.

In addition, this section includes graphs which compare primary consumption and petroleum consumption per capita for 1960-1979 and primary consumption and petroleum consumption per gross product for the same period.

For comparative purposes, the national energy data was compiled in the same manner as the Pennsylvania data. All state and national data exclude non-energy petroleum products and sales of electricity.

PRIMARY CONSUMPTION OF ENERGY, 1979
PENNSYLVANIA AND UNITED STATES
Trillion Btu

Fuel/Sector	Residential	Commercial	Industrial	Transportation	Electric Utilities	Total
PENNSYLVANIA						
Coal	16.5	15.2	696.7	0.0	991.5	1,719.9
Natural Gas	293.8	113.5	318.3	26.7	1.9	754.2
Hydro	—	—	*	—	12.7	12.8
Nuclear	—	—	—	—	202.4	202.4
Distillate	185.6	32.3	87.3	123.2	17.3	445.8
Residual	—	20.1	119.2	30.2	115.7	285.2
Gasoline	—	5.1	5.8	599.2	—	610.2
Kerosene	13.1	—	3.5	—	—	16.7
Aviation Fuels	—	—	0.0	57.0	0.0	57.0
L.P.G.	8.3	1.5	22.6	0.2	—	32.7
Total Primary Consumption	517.4	187.7	1,253.4	836.5	1,341.6	4,136.9
UNITED STATES						
Coal	81.6	128.9	3,636.0	0.0	11,262.7	15,109.0
Natural Gas	5,054.7	2,836.1	6,549.1	611.8	3,609.2	20,660.9
Hydro	—	—	34.4	—	3,131.7	3,166.1
Nuclear	—	—	—	—	2,747.8	2,747.8
Distillate	1,599.8	574.1	1,735.8	2,858.3	271.3	7,039.3
Residual	—	510.6	1,673.6	1,241.8	3,059.5	6,485.4
Gasoline	—	110.0	156.0	13,221.4	—	13,487.5
Kerosene	241.6	—	147.2	—	—	388.8
Aviation Fuels	—	—	0.0	2,256.0	18.0	2,273.9
L.P.G.	455.9	80.5	1,593.8	8.0	—	2,138.1
Total Primary Consumption	7,433.6	4,240.1	17,525.9	20,197.3	24,100.2	73,496.8

* *Represents small, non-zero value.*

Coal: Includes anthracite, bituminous and lignite.

Hydro: Includes industrial and utility production, and net imports of electricity.

Aviation Fuels: Includes jet fuel and aviation gasoline.

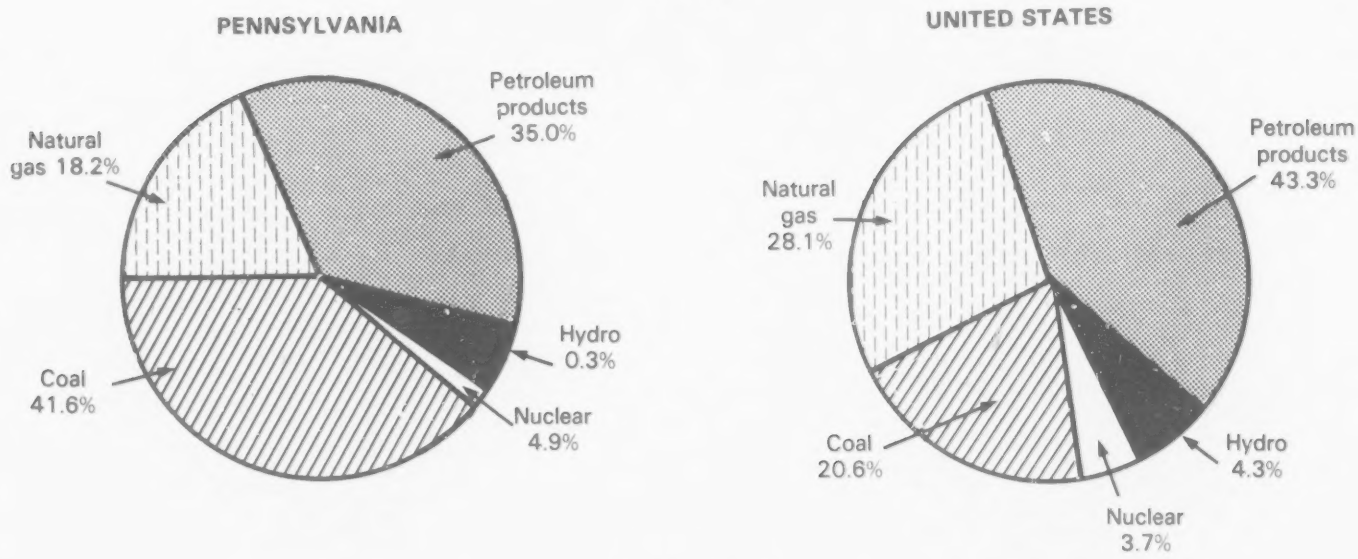
L.P.G.: Includes ethane, ethylene, propane, propylene, butane, butylene, butane-propane mixture, ethane-propane mixture, and isobutane.

Note: Totals may not equal sum of components due to independent roundings.

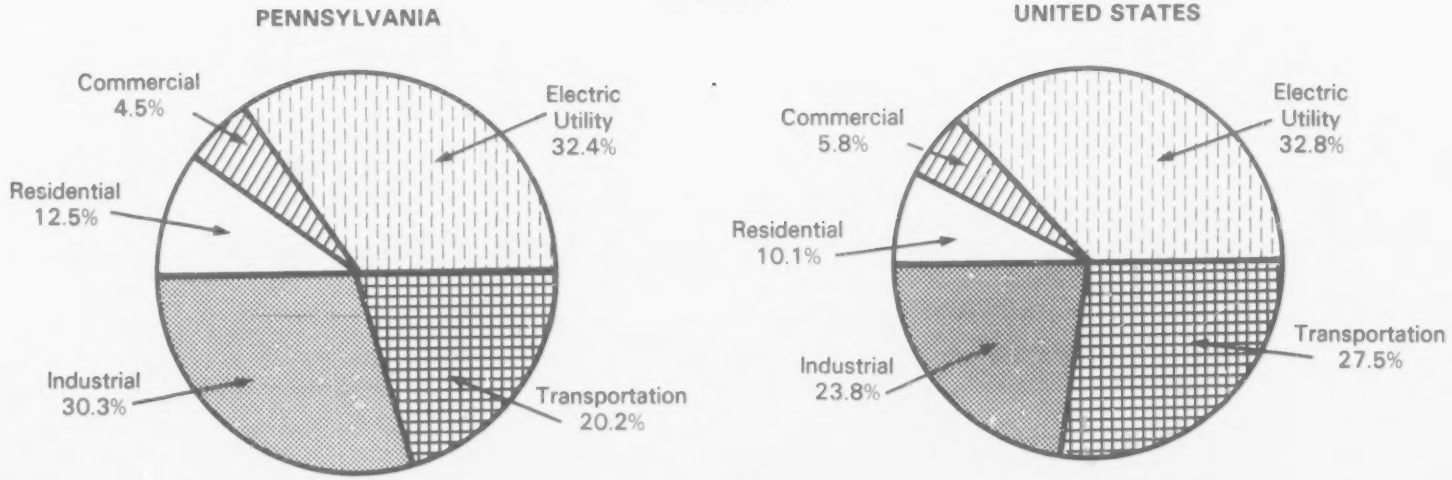
Source: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September, 1981.

PRIMARY CONSUMPTION OF ENERGY, 1979
PENNSYLVANIA AND UNITED STATES

BY FUEL

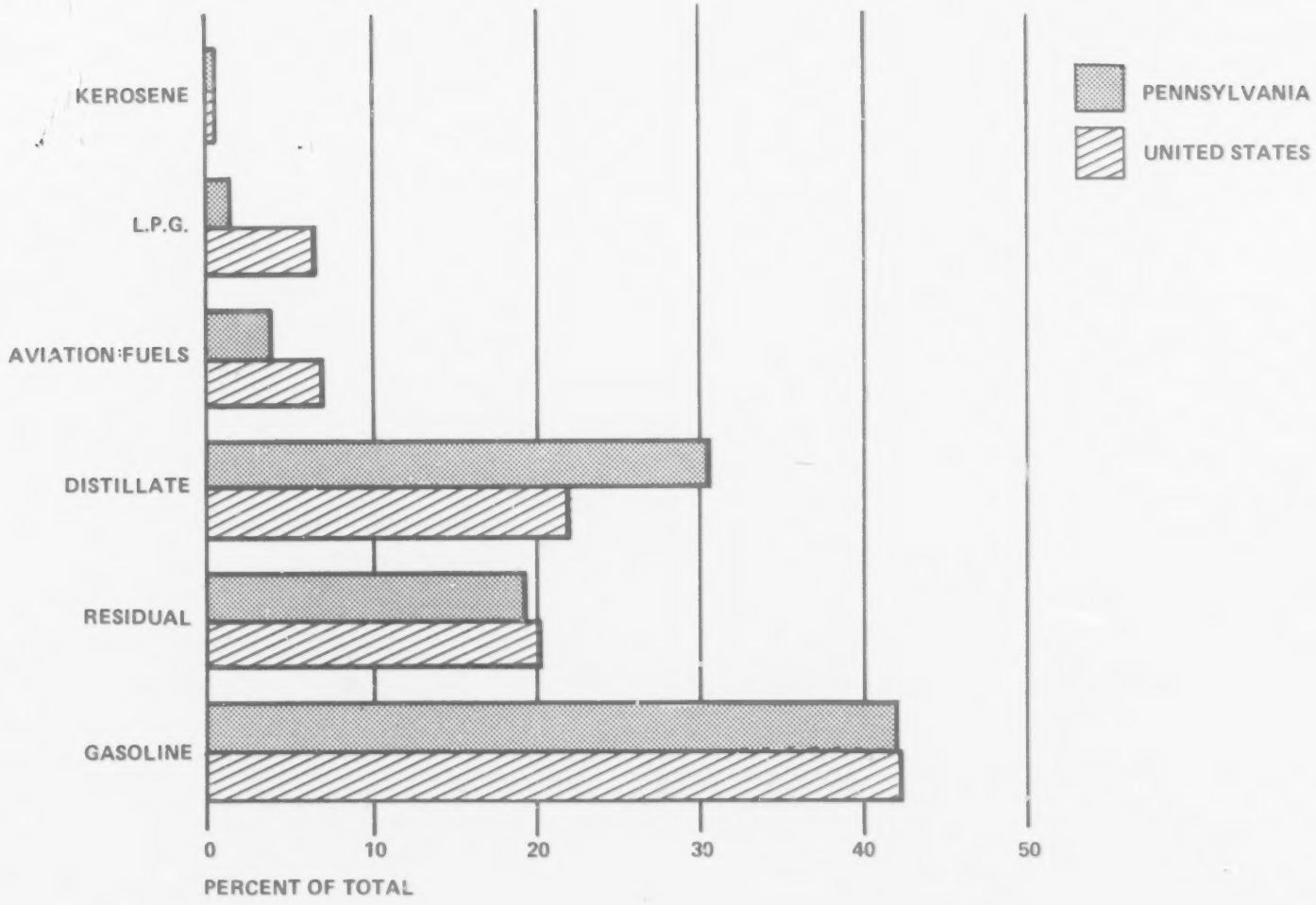


BY SECTOR

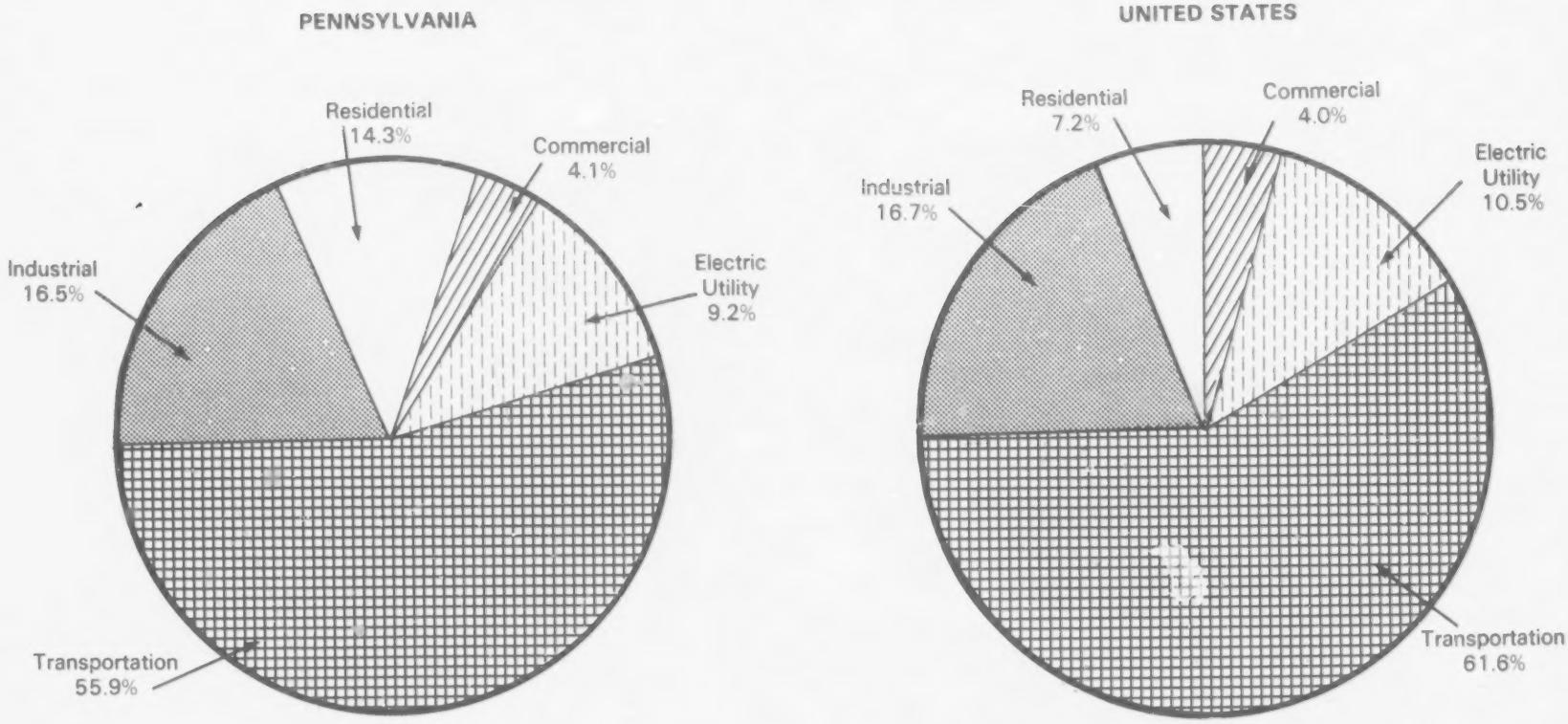


PETROLEUM CONSUMPTION BY PRODUCT, 1979

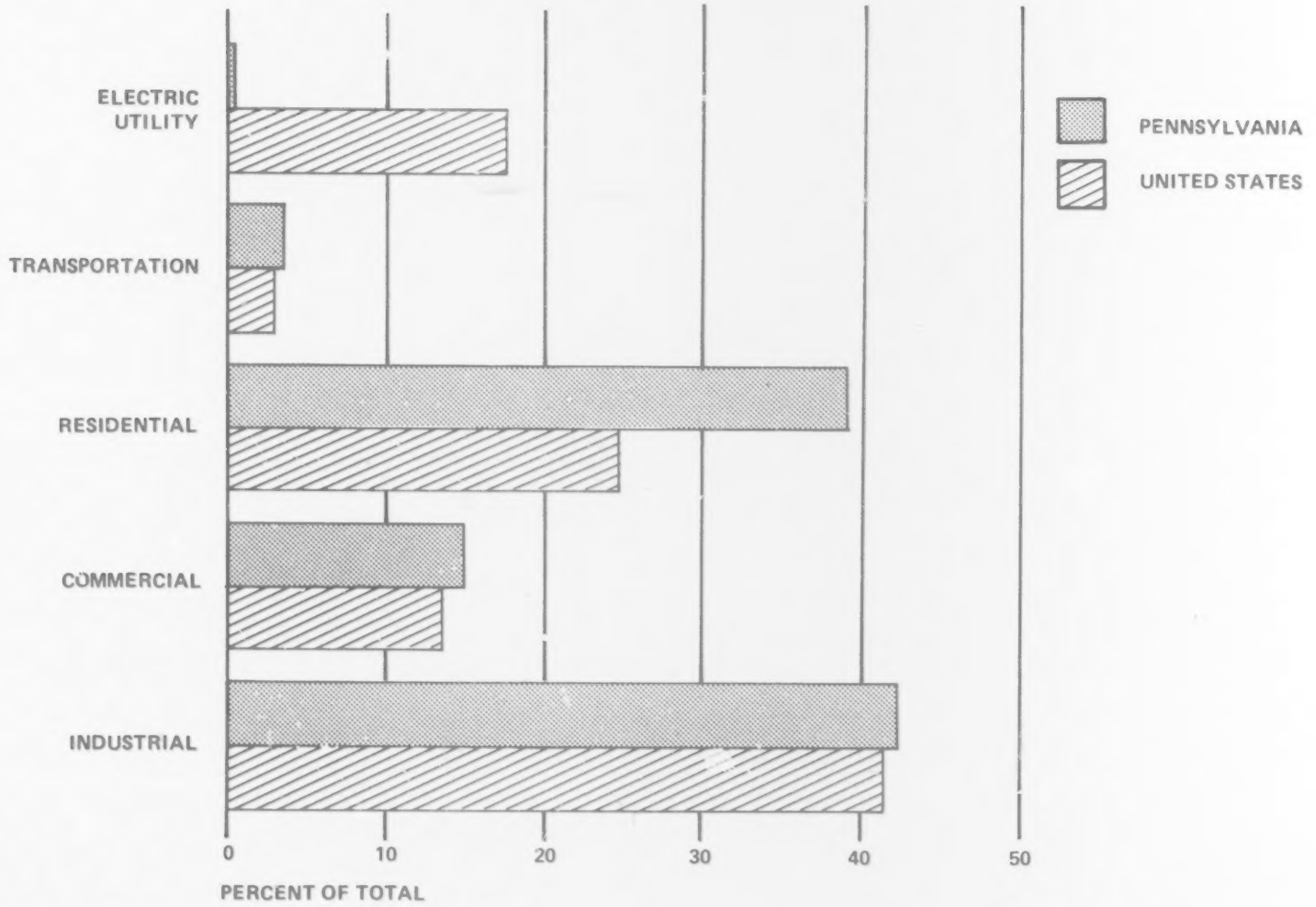
PENNSYLVANIA AND UNITED STATES



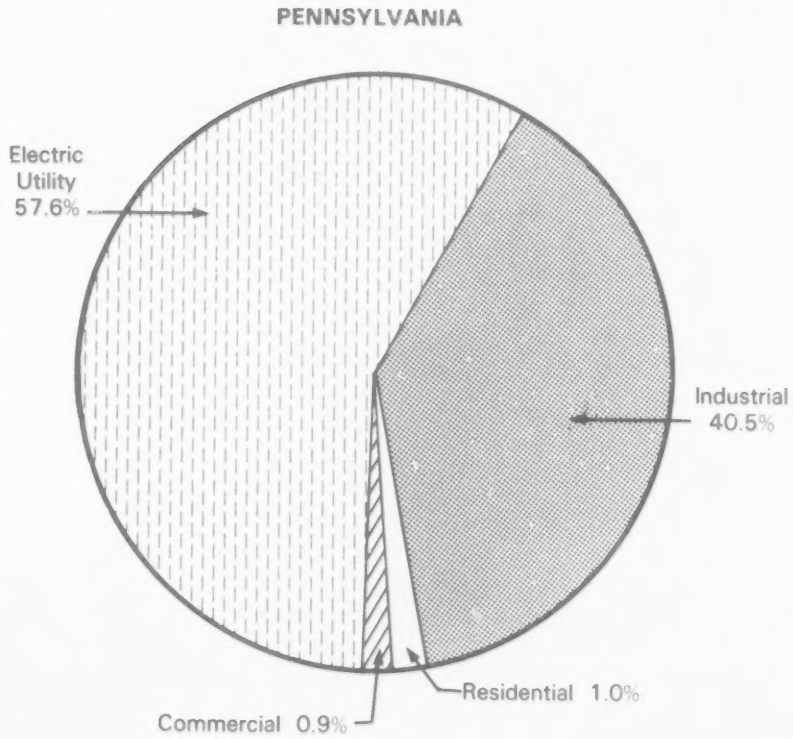
PETROLEUM CONSUMPTION BY SECTOR, 19[illegible]
PENNSYLVANIA AND UNITED STATES

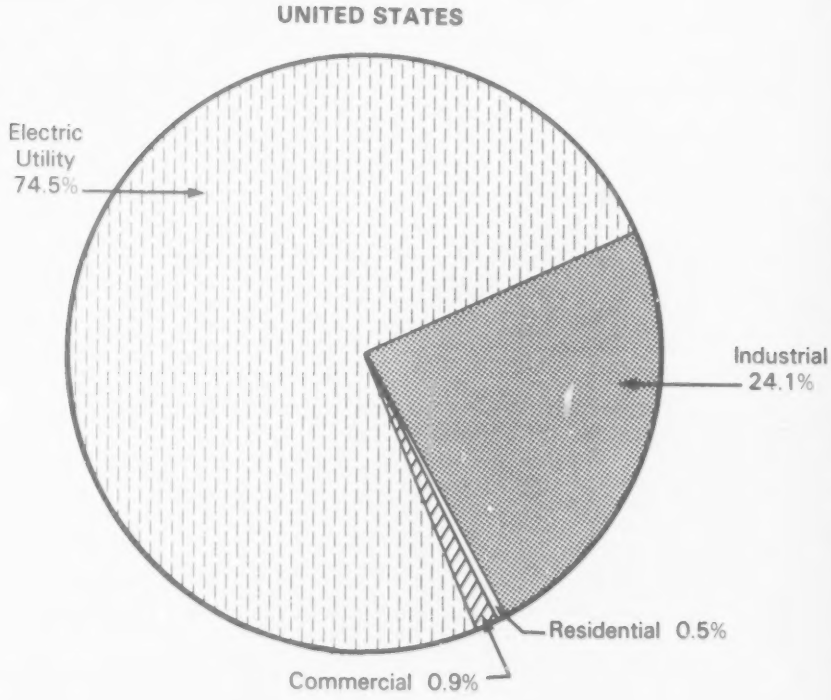


NATURAL GAS CONSUMPTION BY SECTOR, 1979
PENNSYLVANIA AND UNITED STATES

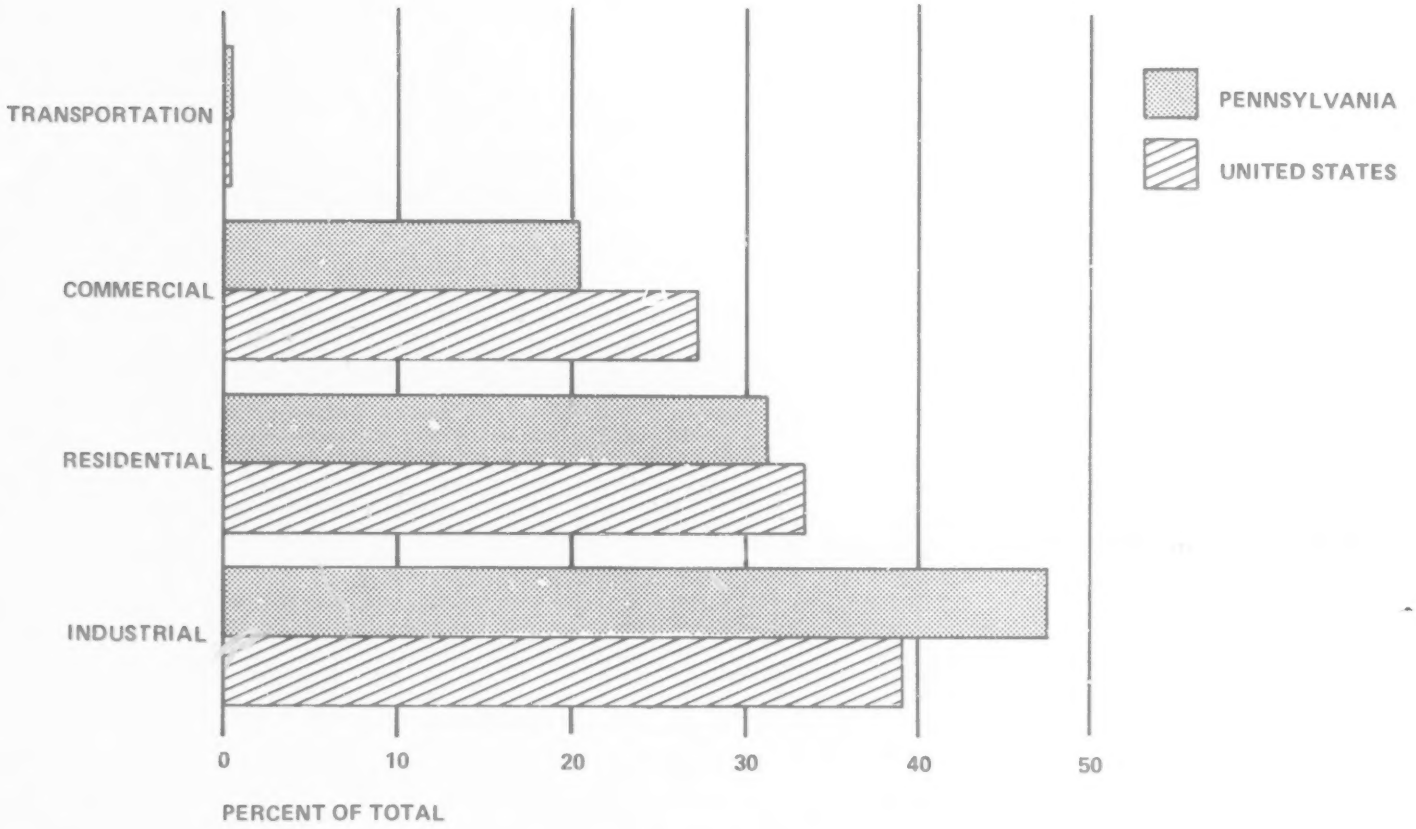


COAL CONSUMPTION BY SECTOR, 1979
PENNSYLVANIA AND UNITED STATES

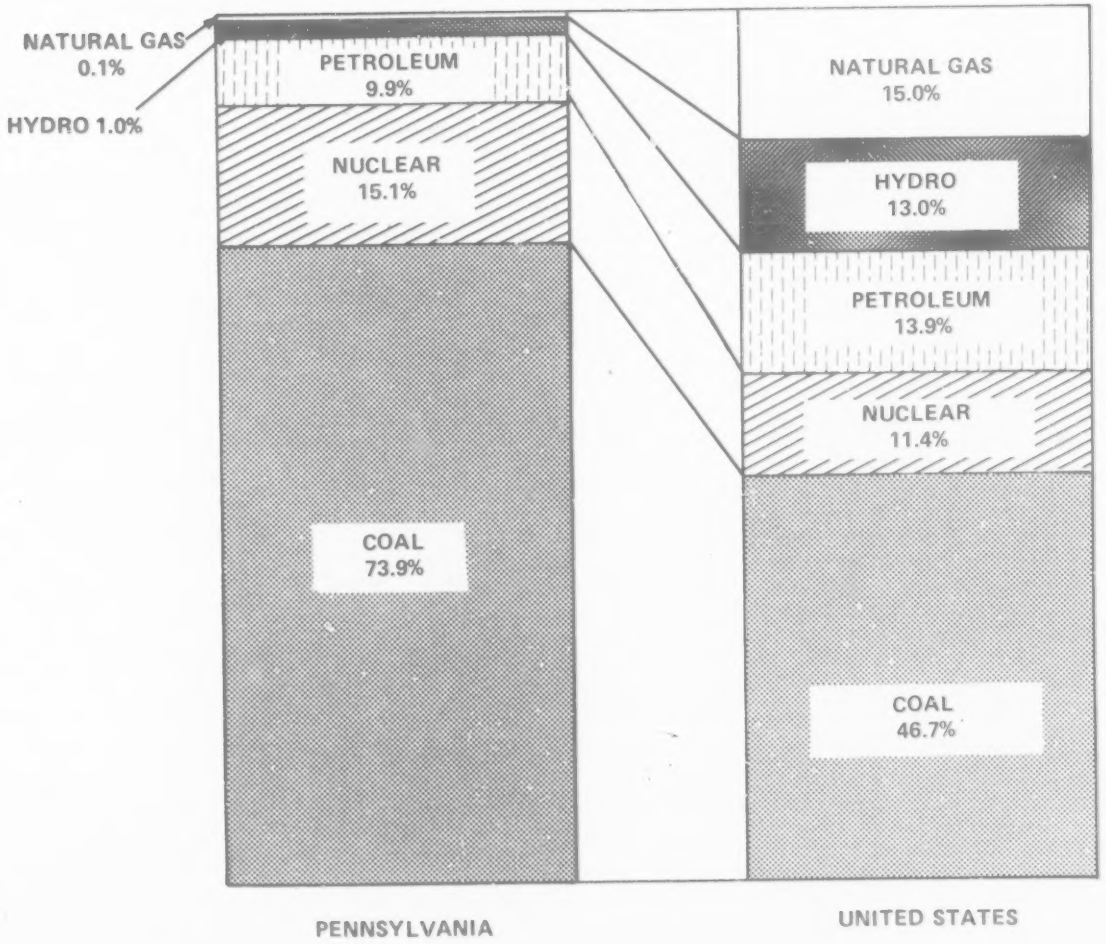




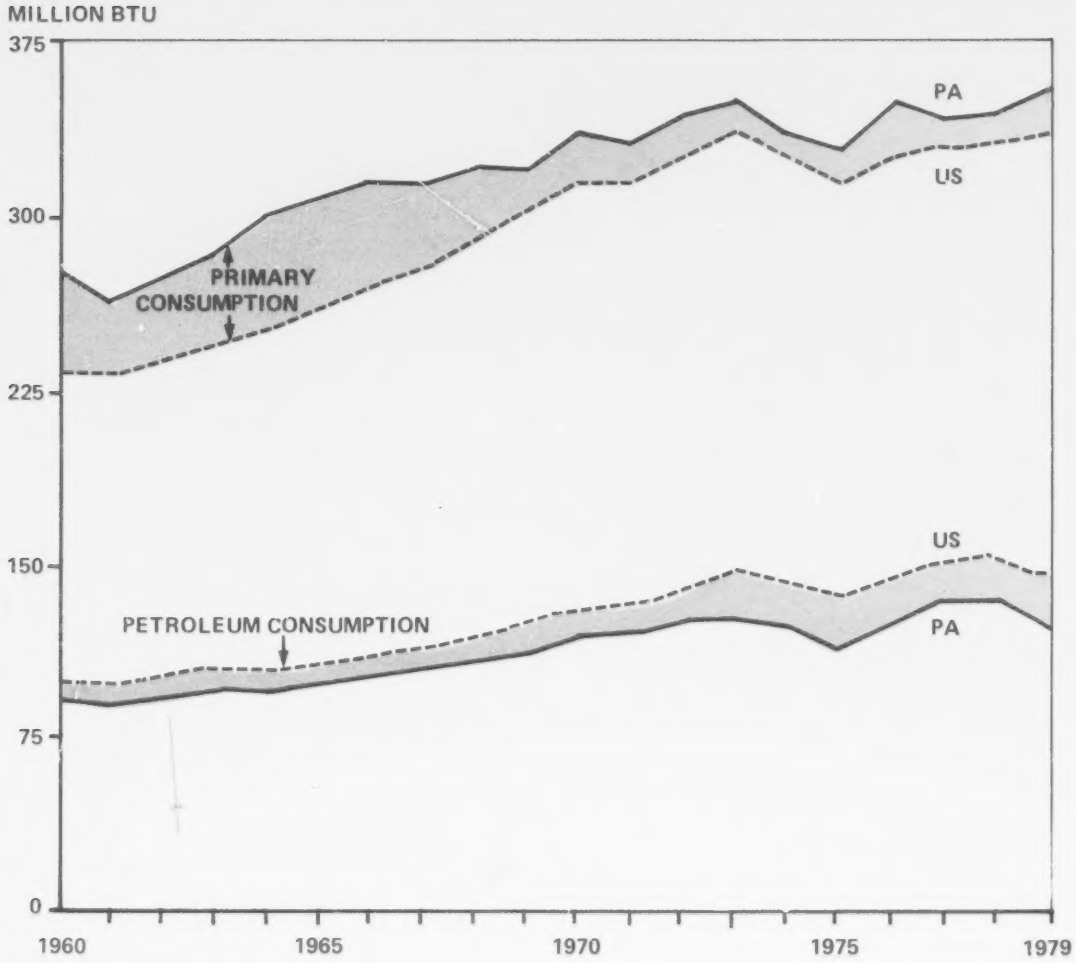
ELECTRICITY SALES BY SECTOR, 1979
PENNSYLVANIA AND UNITED STATES



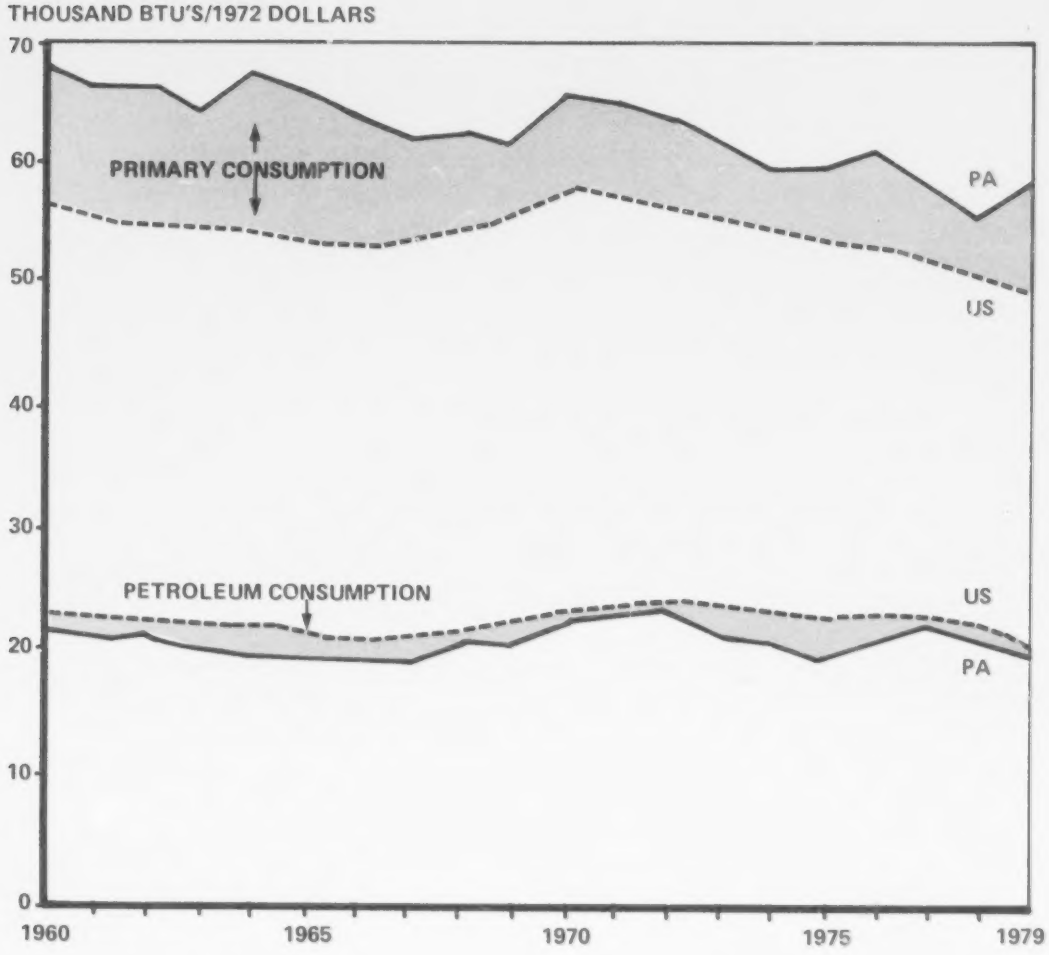
PRIMARY CONSUMPTION BY THE ELECTRIC UTILITIES, 1979
PENNSYLVANIA AND UNITED STATES



PRIMARY CONSUMPTION AND PETROLEUM CONSUMPTION PER CAPITA, 1960-1979
PENNSYLVANIA AND UNITED STATES



PRIMARY CONSUMPTION AND PETROLEUM CONSUMPTION PER GROSS PRODUCT, 1960-1979
PENNSYLVANIA AND UNITED STATES



SECTION FOUR

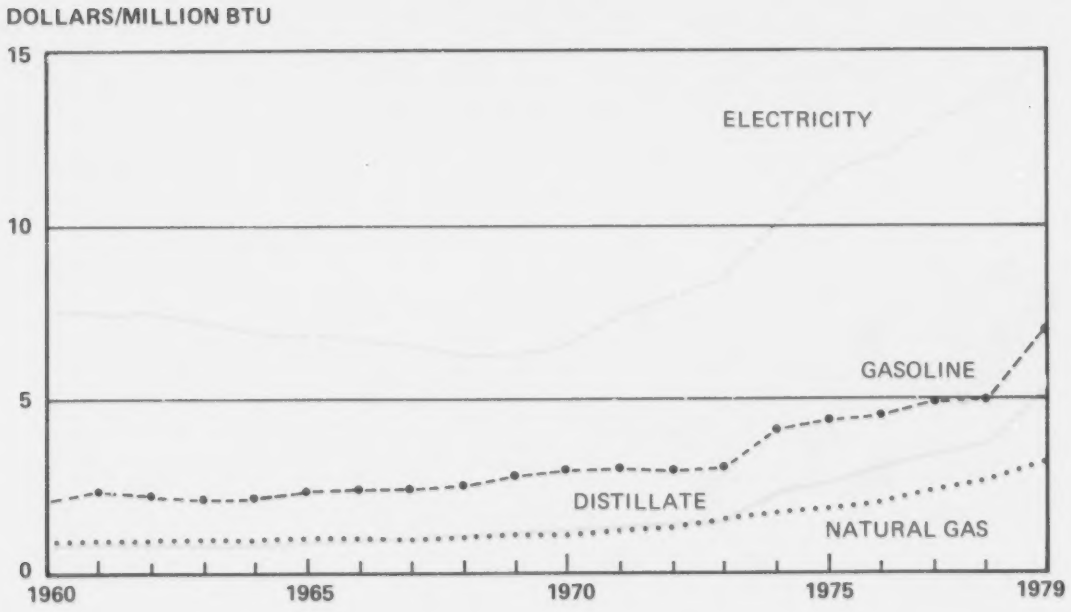
PENNSYLVANIA ENERGY PRICES BY FUEL AND SECTOR

This section presents historical fuel prices at the retail and wholesale level for the period 1960 through 1979, and for 1980 where available. The major fuel commodities include distillate, residual, kerosene, gasoline, liquefied petroleum gas (LPG), electricity and natural gas. Retail energy prices are provided for the residential, commercial and industrial sectors in cost per physical unit and dollars per million Btu. Wholesale prices for the petroleum product fuels are presented in the same manner.

Petroleum product prices are developed by calculating a state markup for each sector, adding this value to the state wholesale price and then adjusting for taxes. The price assignment is based on a pyramiding structure and for some of these fuels equivalent wholesale prices are used. In the markup generation of certain fuels, commercial and industrial prices are proportional to retail prices and such proportions remain constant over time. Retail prices for electricity and natural gas are calculated using revenue and consumption data.

This section also presents domestic coal prices in Pennsylvania of bituminous at the mine-mouth and anthracite at preparation plants from 1968 through 1979. Coal prices are provided in cost per physical unit and dollars per million Btu. The figures shown do not include transportation costs. They are an average price of coal produced in Pennsylvania and are weighted by such cost differentials as method of mining and coal quantity.

RESIDENTIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA



RESIDENTIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA

Date	Gasoline (cents/gallon)	Distillate (cents/gallon)	Kerosene (cents/gallon)	LPG (cents/gallon)	Natural Gas (dollars/thousand cubic feet)	Electricity (dollars/thousand kilowatt hours)
1960	28.48	13.84	14.83	12.28	1.07	26.57
1961	29.90	14.40	15.39	11.26	1.10	26.15
1962	28.65	14.62	15.63	10.65	1.11	25.90
1963	28.65	15.13	16.13	12.01	1.10	25.36
1964	28.65	15.11	16.11	12.38	1.16	24.63
1965	29.32	15.31	16.31	13.00	1.15	23.88
1966	31.32	15.60	16.60	12.95	1.15	23.32
1967	31.48	16.23	17.23	13.80	1.15	22.82
1968	32.65	17.00	18.00	11.97	1.15	22.28
1969	34.73	17.38	18.38	11.33	1.18	22.05
1970	36.48	18.25	19.25	13.86	1.24	23.21
1971	37.23	19.31	20.31	14.15	1.28	26.13
1972	36.74	20.18	21.18	14.96	1.36	27.69
1973	37.90	21.66	22.41	17.85	1.48	28.91
1974	52.88	35.17	37.52	26.28	1.66	35.28
1975	53.90	38.44	41.09	27.34	1.93	39.96
1976	56.73	43.25	46.49	31.44	2.14	41.20
1977	61.40	49.11	50.02	37.70	2.51	44.77
1978	60.98	52.34	53.88	37.18	2.63	46.70
1979	87.05	73.73	75.91	39.85	3.19	49.82
1980	121.66[1]	96.23[2]	NA	NA	3.86	56.05[3]

[1] *The 1980 price per gallon of gasoline was calculated by taking the twelve month average of all types of gasoline for the selected area of Philadelphia, Northeastern Pennsylvania and Pittsburgh, as reported by the U.S. Department of Labor, Bureau of Labor Statistics.*

[2] *The 1980 price per gallon of fuel oil was determined by collecting data on the state's average monthly residential No. 2 fuel oil prices, as reported by the U.S. Department of Energy, Energy Information Administration, and then estimating the annual average.*

[3] *The 1980 price per thousand kilowatt hour was calculated by dividing the residential sector's annual revenues by its sales for the total electric utility industry, as reported by the Edison Electric Institute.*

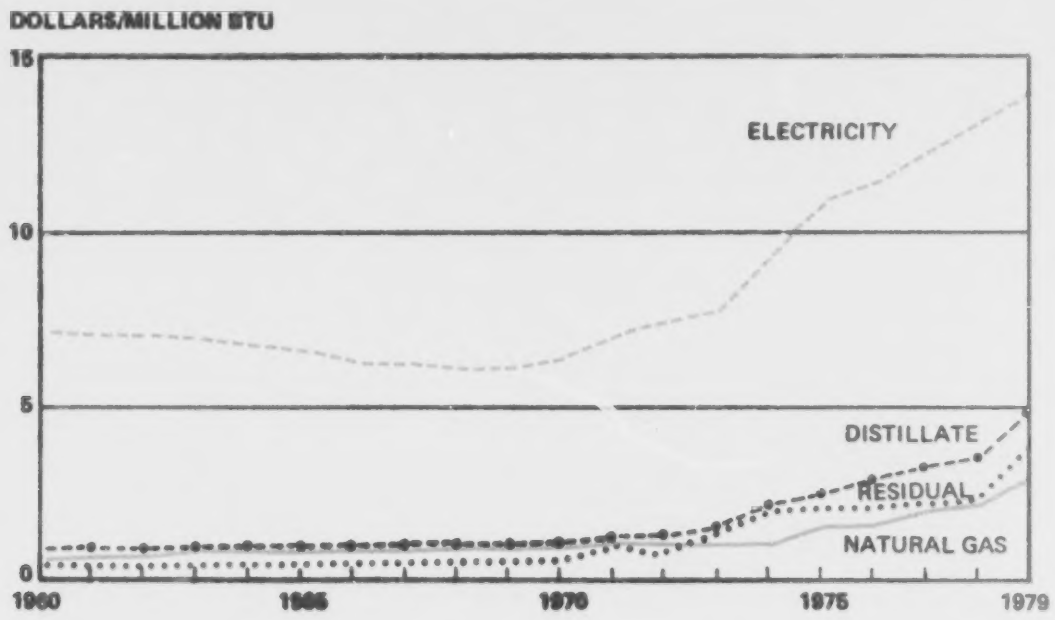
Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1977*, Energy End Use Division, computer printout 1978 and 1979; *Prices and Margins of No. 2 Fuel Oil*, monthly
U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Prices: Energy and Food*, monthly
Edison Electric Institute, *Statistical Year Book*, 1980
American Gas Association, *Gas Facts*, 1980

RESIDENTIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA

Date	Gasoline $/million Btu	Distillate $/million Btu	Kerosene $/million Btu	LPG $/million Btu	Natural Gas $/million Btu	Electricity $/million Btu
1960	2.28	1.00	1.10	1.29	1.04	7.79
1961	2.39	1.04	1.14	1.18	1.07	7.66
1962	2.29	1.05	1.16	1.11	1.07	7.59
1963	2.29	1.09	1.19	1.26	1.07	7.43
1964	2.29	1.09	1.19	1.30	1.13	7.22
1965	2.35	1.10	1.21	1.36	1.11	7.00
1966	2.51	1.12	1.23	1.36	1.11	6.83
1967	2.52	1.17	1.28	1.44	1.11	6.69
1968	2.61	1.23	1.33	1.25	1.11	6.53
1969	2.78	1.25	1.36	1.19	1.14	6.48
1970	2.92	1.32	1.43	1.45	1.20	6.80
1971	2.98	1.39	1.50	1.48	1.24	7.66
1972	2.94	1.46	1.57	1.57	1.31	8.12
1973	3.03	1.56	1.66	1.87	1.44	8.47
1974	4.23	2.54	2.78	2.75	1.61	10.34
1975	4.31	2.77	3.04	2.86	1.87	11.71
1976	4.54	3.12	3.44	3.29	2.07	12.08
1977	4.91	3.54	3.70	3.95	2.43	13.12
1978	4.88	3.77	3.99	3.89	2.55	13.69
1979	6.96	5.32	5.62	4.36	3.09	14.60
1980	9.73	6.94	NA	NA	3.74	16.43

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1977*; Energy End Use Division, computer printout, 1978 and 1979; *Prices and Margins of No. 2 Fuel Oil*, monthly.
U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Prices: Energy and Food*, monthly.
Edison Electric Institute, *Statistical Year Book*, 1980.
American Gas Association, *Gas Facts*, 1980.

COMMERCIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA



COMMERCIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA

Date	Distillate (cents/gallon)	Residual (dollars/barrel)	Natural Gas (dollars/thousand cubic feet)	Electricity (dollars/thousand kilowatt hour)
1960	12.37	3.24	0.86	25.01
1961	13.00	3.36	0.87	24.33
1962	13.10	3.18	0.87	24.07
1963	13.33	2.96	0.89	23.69
1964	13.12	2.92	0.89	22.93
1965	13.36	2.96	0.90	22.34
1966	13.72	3.02	0.91	21.61
1967	14.32	3.21	0.90	21.28
1968	14.94	3.31	0.90	20.77
1969	15.19	3.20	0.92	20.53
1970	15.83	3.92	0.96	21.66
1971	16.77	5.49	1.01	24.28
1972	17.34	4.27	1.09	25.43
1973	18.88	8.20	1.15	26.51
1974	32.38	13.64	1.28	32.93
1975	35.39	13.23	1.71	37.48
1976	40.13	12.93	1.72	39.13
1977	45.79	14.87	2.31	42.60
1978	48.68	14.29	2.39	45.37
1979	69.39	22.92	2.95	47.90
1980	NA	NA	3.65	53.36*

[1] The 1980 price per thousand kilowatt-hour was calculated by dividing the commercial sector's annual revenues by its sales for the total electric utility industry, as reported by the Edison Electric Institute. The following classes of service are also included: street and highway lighting, other public authorities, and interdepartmental.

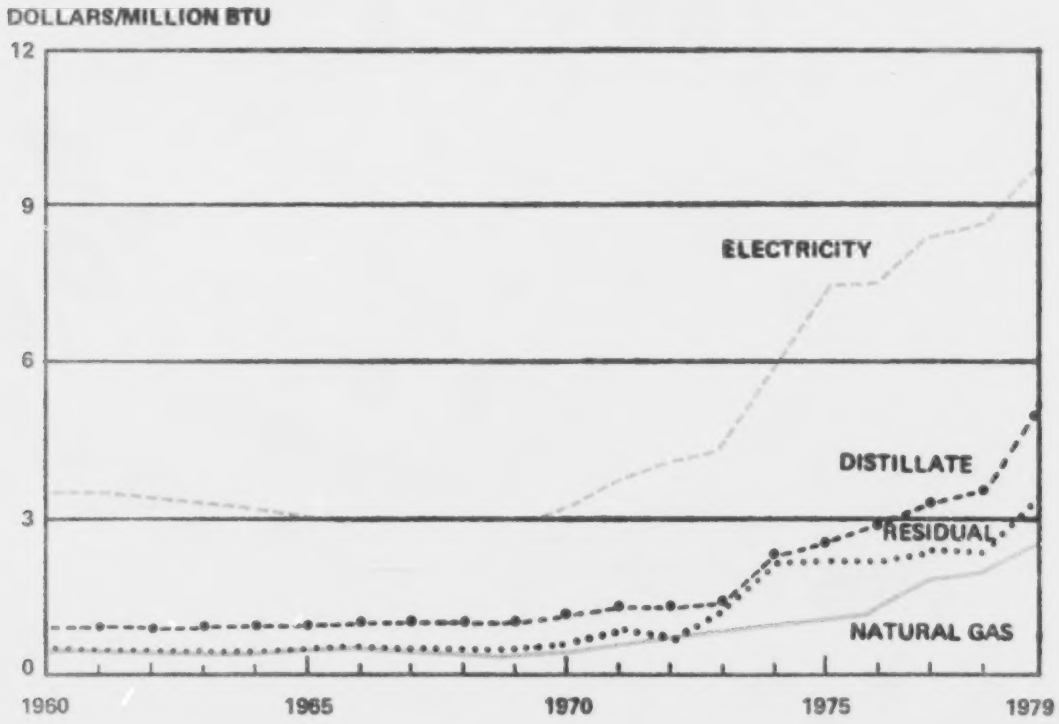
Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1977*; Energy End Use Division, computer printout, 1978 and 1979.
Edison Electric Institute, *Statistical Year Book*, 1980.
American Gas Association, *Gas Facts*, 1980.

COMMERCIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA

Date	Distillate ($/million Btu)	Residual ($/million Btu)	Natural Gas ($/million Btu)	Electricity ($/million Btu)
1960	0.89	0.52	0.82	7.33
1961	0.94	0.53	0.84	7.13
1962	0.94	0.51	0.84	7.06
1963	0.96	0.47	0.85	6.94
1964	0.95	0.46	0.86	8.72
1965	0.98	0.47	0.86	6.55
1966	0.99	0.48	0.87	6.33
1967	1.03	0.51	0.87	6.24
1968	1.08	0.53	0.87	6.09
1969	1.10	0.51	0.89	6.02
1970	1.14	0.62	0.94	6.35
1971	1.21	0.87	0.98	7.12
1972	1.25	0.68	1.05	7.45
1973	1.36	1.31	1.12	7.77
1974	2.33	2.17	1.24	9.65
1975	2.55	2.10	1.66	10.99
1976	2.89	2.06	1.67	11.47
1977	3.30	2.36	2.24	12.48
1978	3.51	2.27	2.32	13.30
1979	5.00	3.65	2.86	14.04
1980	NA	NA	3.54	15.64

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1977;* Energy End Use Division, computer printout, 1978 and 1979.
Edison Electric Institute, *Statistical Year Book,* 1980.
American Gas Association, *Gas Facts,* 1980.

INDUSTRIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA



INDUSTRIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA

Date	Distillate (cents/gallon)	Residual (dollars/barrel)	Kerosene (cents/gallon)	LPG (cents/gallon)	Natural Gas (dollars/thousand cubic feet)	Electricity (dollars/thousand kilowatt hour)
1960	12.27	3.18	13.26	10.88	0.57	12.19
1961	12.90	3.30	13.88	10.08	0.57	12.18
1962	13.00	3.13	14.00	9.46	0.57	12.00
1963	13.20	2.91	14.20	10.48	0.54	11.70
1964	12.98	2.87	13.98	10.64	0.56	11.17
1965	13.22	2.91	14.22	11.22	0.56	10.84
1966	13.58	2.96	14.58	11.28	0.56	10.52
1967	14.18	3.14	15.18	12.06	0.54	10.60
1968	14.79	3.23	15.79	10.41	0.53	10.41
1969	15.03	3.12	16.03	9.81	0.55	10.42
1970	15.65	3.85	16.65	11.89	0.59	11.34
1971	16.59	5.38	17.58	12.15	0.65	13.40
1972	17.13	4.25	18.13	12.70	0.72	14.23
1973	18.68	7.83	19.42	15.62	0.76	14.93
1974	32.18	13.26	34.54	24.05	0.94	21.04
1975	35.18	13.21	37.63	25.02	1.09	25.33
1976	39.91	12.89	36.49	29.01	1.35	25.72
1977	45.55	14.86	46.46	34.97	1.91	28.89
1978	48.42	14.84	49.96	34.40	2.01	30.92
1979	69.08	22.80	71.25	37.33	2.50	33.44
1980	NA	NA	NA	NA	3.24	41.04[1]

[1] *The 1980 price per thousand kilowatt-hour was calculated by dividing the industrial sector's annual revenues by its sales for the total electric utility industry, as reported by the Edison Electric Institute.*

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1977*; Energy End Use Division, computer printout, 1978 and 1979.
Edison Electric Institute, *Statistical Year Book*, 1980.
American Gas Association, *Gas Facts*, 1980.

INDUSTRIAL SECTOR RETAIL ENERGY PRICES, 1960-1979
PENNSYLVANIA

Date	Distillate ($/million Btu)	Residual ($/million Btu)	Kerosene ($/million Btu)	LPG ($/million Btu)	Natural Gas ($/million Btu)	Electricity ($/million Btu)
1960	0.88	0.51	0.98	1.14	0.55	3.57
1961	0.93	0.52	1.03	1.06	0.55	3.57
1962	0.94	0.50	1.04	0.99	0.55	3.52
1963	0.95	0.46	1.05	1.10	0.52	3.43
1964	0.94	0.46	1.04	1.11	0.54	3.27
1965	0.95	0.46	1.05	1.18	0.54	3.18
1966	0.98	0.47	1.08	1.18	0.54	3.08
1967	1.02	0.50	1.12	1.26	0.53	3.11
1968	1.07	0.51	1.17	1.09	0.52	3.05
1969	1.08	0.50	1.19	1.03	0.53	3.05
1970	1.13	0.61	1.23	1.24	0.57	3.32
1971	1.20	0.86	1.30	1.27	0.63	3.93
1972	1.24	0.68	1.34	1.33	0.70	4.17
1973	1.35	1.24	1.44	1.64	0.74	4.38
1974	2.32	2.11	2.56	2.52	0.91	6.17
1975	2.54	2.10	2.80	2.62	1.06	7.42
1976	2.88	2.05	2.70	3.04	1.31	7.54
1977	3.28	2.36	3.44	3.66	1.85	8.47
1978	3.49	2.36	3.70	3.60	1.95	8.06
1979	4.98	3.63	5.28	4.09	2.42	9.80
1980	NA	NA	NA	NA	3.14	12.03

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1979;* Energy End Use Division, computer printout, 1978 and 1979.
Edison Electric Institute, *Statistical Year Book,* 1980.
American Gas Association, *Gas Facts,* 1980.

WHOLESALE ENERGY PRICES, 1960-1979
PENNSYLVANIA

Year	Gasoline (cents/gallon)	Distillate (cents/gallon)	Residual (dollars/barrel)	Kerosene (cents/gallon)	LPG (cents/gallon)
1960	19.48	9.49	2.57	10.49	8.42
1961	19.40	10.24	2.65	11.22	8.01
1962	17.65	10.13	2.51	11.13	7.38
1963	17.65	9.80	2.39	10.81	7.78
1964	17.65	9.24	2.34	10.24	7.57
1965	18.32	9.53	2.38	10.53	8.09
1966	20.32	10.02	2.38	11.02	8.32
1967	20.48	10.57	2.38	11.57	8.98
1968	21.65	10.90	2.38	11.90	7.68
1969	23.73	10.90	2.32	11.90	7.11
1970	24.73	11.08	3.16	12.08	8.41
1971	25.23	11.78	4.21	12.78	8.63
1972	24.74	11.75	4.08	12.75	8.71
1973	25.90	13.41	3.89	14.16	11.69
1974	40.55	26.92	9.32	29.27	20.11
1975	40.90	29.43	13.06	32.08	20.93
1976	43.73	31.37	12.45	34.42	22.80
1977	48.40	37.06	14.81	37.92	28.45
1978	47.98	38.31	13.90	39.77	27.22
1979	73.00	56.41	21.45	58.46	30.49

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1977;* Energy End Use Division, computer printout, 1978 and 1979.

WHOLESALE ENERGY PRICES, 1960-1979
PENNSYLVANIA

Year	Gasoline $/million Btu	Distillate $/million Btu	Residual $/million Btu	Kerosene $/million Btu	LPG $/million Btu
1960	1.56	0.68	0.41	0.78	0.88
1961	1.55	0.74	0.42	0.83	0.84
1962	1.41	0.73	0.40	0.82	0.77
1963	1.41	0.71	0.38	0.80	0.82
1964	1.41	0.67	0.37	0.76	0.79
1965	1.47	0.69	0.38	0.78	0.85
1966	1.63	0.72	0.38	0.82	0.87
1967	1.64	0.76	0.38	0.86	0.94
1968	1.73	0.79	0.38	0.88	0.80
1969	1.90	0.79	0.37	0.88	0.74
1970	1.98	0.80	0.50	0.89	0.88
1971	2.02	0.85	0.67	0.95	0.90
1972	1.98	0.85	0.85	0.94	0.91
1973	2.07	0.97	0.82	1.05	1.22
1974	3.25	1.94	1.48	2.17	2.11
1975	3.27	2.12	2.08	2.38	2.19
1976	3.50	2.26	1.98	2.55	2.39
1977	3.87	2.67	2.36	2.81	2.98
1978	3.84	2.76	2.21	2.95	2.85
1979	5.84	4.07	3.41	4.33	3.34

Sources: U.S. Department of Energy, Energy Information Administration, *State Energy Fuel Prices by Major Economic Sector From 1960 Through 1977*; Energy End Use Division, computer printout, 1978 and 1979.

BITUMINOUS AND ANTHRACITE COAL PRICES, 1968-1979
PENNSYLVANIA

	Bituminous F.O.B.[1] Mines		Anthracite Preparation Plants	
	Dollar per Short Ton			
Year	Current	Constant[2]	Current	Constant[2]
1968	5.37	6.51	8.78	10.64
1969	5.87	6.76	9.91	11.42
1970	7.27	7.95	11.03	12.06
1971	8.52	8.88	12.08	12.58
1972	9.14	9.74	12.40	12.40
1973	10.30	9.74	13.65	12.92
1974	20.35	17.71	22.19	19.31
1975	25.09	19.99	32.26	25.69
1976	25.33	19.17	33.92	25.68
1977	25.60	18.31	34.86	24.93
1978	27.86	18.56	35.25	23.49
1979	29.42	18.07	38.00	23.35
1980[4]	NA	NA	41.00	23.11
	Dollars per Million Btu[3]			
1968	0.21	0.26	0.38	0.46
1969	0.24	0.27	0.42	0.49
1970	0.30	0.32	0.47	0.52
1971	0.35	0.37	0.51	0.54
1972	0.38	0.40	0.53	0.53
1973	0.43	0.41	0.59	0.56
1974	0.86	0.75	0.98	0.86
1975	1.08	0.86	1.38	1.10
1976	1.09	0.83	1.49	1.13
1977	1.13	0.81	1.50	1.08
1978	1.24	0.83	1.50	1.00
1979	1.30	0.80	1.61	1.00
1980[4]	NA	NA	1.74	0.98

[1] *Free on Board.*

[2] *Constant 1972 prices calculated using GNP implicit price deflators, 1972=100.*

[3] *These price figures were calculated by using the annual production thermal conversion factors for bituminous and anthracite.*

[4] *Preliminary.*

Sources: Keystone Bituminous Coal Association, *Pennsylvania Coal Data 1981.*

U.S. Department of Interior, Bureau of Mines, *Minerals Yearbook.* "Coal-Bituminous and Lignite" and "Coal-Pennsylvania Anthracite."

U.S. Department of Energy, Energy Information Administration, *Bitunimous Coal and Lignite Production and Mine Operation Report; Coal-Pennsylvania Anthracite;* and *1980 Annual Report to Congress, Volume Two: Data.*

SECTION FIVE

ELECTRICITY

This section includes a diverse selection of data on the electric utility industry in Pennsylvania. The first two tables are designed to provide a current inventory of electric generating facilities by county for both existing and projected power plants. Also listed are the generator nameplate rating assigned by the generator manufacturer, the number of units each utility maintains and the primary source of fuel. Data presented in the inventory are compiled from a variety of sources, including statistical forms filed by utilities with government agencies and additional information provided by individual utilities and regional power coordinating councils. A map which follows presents the location of each generating facility by service territory.

In addition, this section includes installed generating capacity by the type of prime mover driving the generator for the total electric utility industry for the period 1970 through 1979. Installed generating capacity rose from 19,558 megawatts in 1970 to 33,469 megawatts in 1979, an increase of 71 percent. Of the four types of prime movers listed, conventional steam represented 90.2 percent of the total in 1970; in 1979 it had decreased to 79.4 percent. Hydro constituted 8.5 percent in 1970 and 4.9 percent in 1979. The share of nuclear steam rose from 0.8 percent in 1970 to 15.4 percent in 1979. The share of internal combustion remained relatively constant.

An analysis of fuel costs for electric generation for the electric utility industry is also provided for the period 1970 through 1979. The average costs of coal, oil and gas are presented in cents per million Btu and in dollars per physical unit.

A final table illustrates the manufacturing purchases of electricity by SIC industry group from 1976 to 1978. Pennsylvania industries obtained 8.3 percent more electricity in 1978 than they did in 1976.

As in previous sections, 1980 data has been added where available.

PENNSYLVANIA'S EXISTING ELECTRIC GENERATING FACILITIES AS OF DECEMBER 1980*

Utility	Plant	County	Generator Nameplate Rating (MW)	Number of Units	Primary Fuel
Duquesne Light Company	1—Beaver Valley	Beaver	923.0	1	Nuclear
	2—Brunot Island	Allegheny	410.7	7	Oil
	3—Cheswick	Allegheny	565.3	1	Coal
	4—Elrama	Washington	510.3	4	Coal
	5—Phillips, F.	Allegheny	411.3	4	Coal
	6—Shippingport	Beaver	100.0	1	Nuclear
Pennsylvania Power & Light Co.	7—Allentown	Lehigh	64.0	4	Oil
	8—Brunner Island	York	1,558.7	3	Coal
	9—Brunner Island	York	8.3	3	Oil
	10—Fishbach	Schuylkill	37.2	2	Oil
	11—Harrisburg	Dauphin	64.0	4	Oil
	12—Harwood	Luzerne	32.0	2	Oil
	13—Holtwood	Lancaster	75.0	1	Coal
	14—Holtwood	Lancaster	108.2	12	Hydro
	15—Jenkins	Luzerne	32.0	2	Oil
	16—Lock Haven	Clinton	18.6	1	Oil
	17—Martins Creek	Northampton	312.5	2	Coal
	18—Martins Creek	Northampton	1,800.8	8	Oil
	19—Montour	Montour	1,641.7	3	Coal
	20—Suburban	Lackawanna	29.2	1	Oil
	21—Sunbury	Snyder	409.8	4	Coal
	22—Sunbury	Snyder	52.6	4	Oil
	23—Wallenpaupack	Pike	40.0	2	Hydro
	24—West Shore	Dauphin	37.2	2	Oil
	25—Williamsport	Lycoming	32.0	2	Oil
Pennsylvania Power Company	26—Bruce Mansfield	Beaver	2,662.0	3	Coal
	27—New Castle	Lawrence	425.8	5	Coal
	28—New Castle	Lawrence	2.2	2	Oil
Philadelphia Electric Company	29—Barbadoes	Montgomery	46.0	3	Oil
	30—Barbadoes	Montgomery	23.0	1	Natural Gas
	31—Chester	Chester	58.6	4	Oil
	32—Cromby	Chester	420.3	3	Oil
	33—Croydon	Bucks	546.4	8	Oil
	34—Delaware	Philadelphia	392.3	7	Oil
	35—Eddystone	Delaware	707.2	2	Coal
	36—Eddystone	Delaware	861.7	6	Oil
	37—Falls	Bucks	63.8	3	Oil
	38—Moser	Montgomery	63.8	3	Oil

PENNSYLVANIA'S EXISTING ELECTRIC GENERATING FACILITIES AS OF DECEMBER 1980*
(Continued)

Utility	Plant	County	Generator Nameplate Rating (MW)	Number of Units	Primary Fuel
	39—Muddy Run	Lancaster	800.0	8	Pumped Storage
	40—Peach Bottom	York	2,196.6	2	Nuclear
	41—Plymouth Meeting	Montgomery	85.9	2	Oil
	42—Richmond	Philadelphia	922.2	21	Oil
	43—Schuylkill	Philadelphia	318.0	6	Oil
	44—Southwark	Philadelphia	422.2	7	Oil
Safe Harbor Water Power Corporation	45—Safe Harbor	Lancaster	232.1	9	Hydro
UGI Corporation	46—Hunlock Creek	Luzerne	50.0	1	Coal
GPU: Metropolitan Edison Company	47—Hamilton	Adams	19.6	1	Oil
	48—Hunterstown	Adams	58.8	3	Oil
	49—Mountain	Cumberland	53.2	2	Oil
	50—Orrtanna	Adams	19.6	1	Oil
	51—Portland	Northampton	426.7	2	Coal
	52—Portland	Northampton	37.6	2	Natural Gas
	53—Shawnee	Northampton	19.6	1	Oil
	54—Titus	Berks	225.0	3	Coal
	55—Titus	Berks	35.6	2	Oil
	56—Tolna	York	53.2	2	Oil
	57—Yorkhaven	Dauphin	19.6	1	Hydro
GPU: Pennsylvania Electric Company	58—Benton	Sullivan	4.0	2	Oil
	59—Blossburg	Sullivan	23.6	1	Natural Gas
	60—Conemaugh	Indiana	1,872.0	2	Coal
	61—Conemaugh	Indiana	11.2	4	Oil
	62—Deep Creek	Clarion	19.2	2	Hydro
	63—Front Street	Erie	118.8	5	Coal
	64—Homer City	Indiana	1,006.0	3	Coal
	65—Homer City	Indiana	3.0	3	Oil
	66—Keystone	Armstrong	1,872.0	2	Coal
	67—Keystone	Armstrong	8.6	4	Oil
	68—Piney	Clarion	28.8	3	Hydro
	69—Seneca	Warren	422.1	3	Pumped Storage
	70—Seward	Indiana	280.2	4	Coal
	71—Shawville	Clearfield	640.0	4	Coal
	72—Shawville	Clearfield	6.0	3	Oil
	73—Warren	Warren	84.6	2	Coal
	74—Warren	Warren	53.1	1	Oil
	75—Warrior Ridge	Huntingdon	2.0	1	Hydro

PENNSYLVANIA'S EXISTING ELECTRIC GENERATING FACILITIES AS OF DECEMBER 1980*
(Continued)

Utility	Plant	County	Generator Nameplate Rating (MW)	Number of Units	Primary Fuel
	76—Wayne	Crawford	53.1	1	Oil
	77—Williamsburg	Blair	25.0	1	Coal
APS: West Penn Power Company	78—Armstrong	Armstrong	326.4	2	Coal
	79—Hatfield's Ferry	Greene	1,728.0	3	Coal
	80—Milesburg	Centre	46.0	2	Oil
	81—Mitchell	Washington	299.2	1	Coal
	82—Mitchell	Washington	149.6	2	Oil
	83—Springdale	Allegheny	215.4	2	Oil
Penn State University	84—State College	Centre	6.5	1	Coal

** This is an inventory of existing power plants in the Commonwealth. Pennsylvania utilities do not own all of this capacity, nor does this inventory include Pennsylvania-owned capacity located outside Pennsylvania.*

Sources:

U.S. Department of Energy, Energy Information Administration, *Inventory of Power Plants in the United States — 1980 Annual.*
Pennsylvania Public Utility Commission, *Power System Statement,* PUC Docket 138.

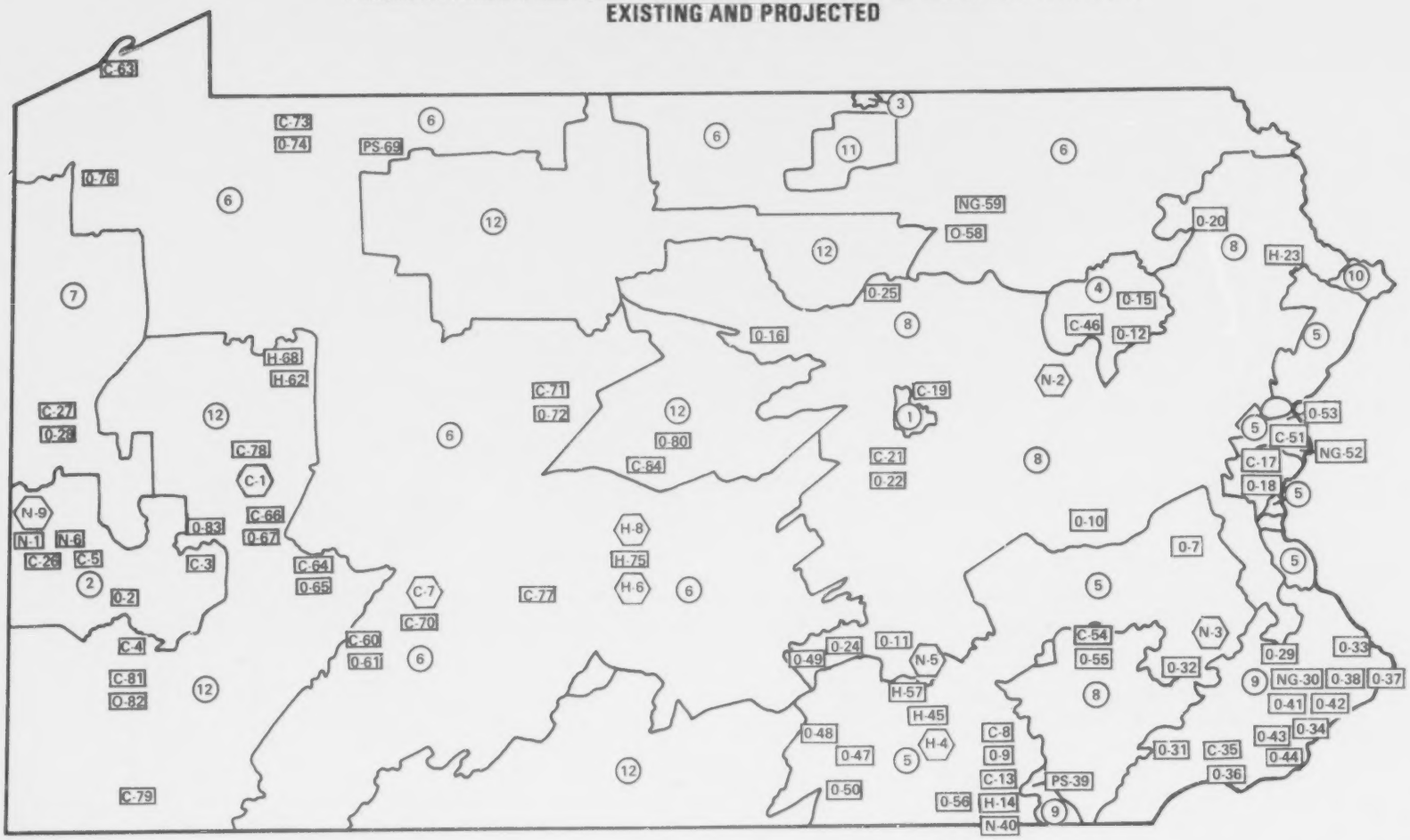
PENNSYLVANIA'S PROJECTED ELECTRIC GENERATING FACILITIES AS OF DECEMBER 1980*

Utility	Plant	County	Unit Number	Generator Nameplate Rating (MW)	Primary Fuel	In-Service Date
APS/West Penn Power Co.	1—Lower Armstrong	Armstrong	1	630.0	Coal	3 Qtr., 1988
			2	630.0	Coal	3 Qtr., 1990
			3	630.0	Coal	3 Qtr., 1991
Pennsylvania Power & Light Co.	2—Susquehanna	Luzerne	1	945.0	Nuclear	2 Qtr., 1983
			2	945.0	Nuclear	2 Qtr., 1984
Philadelphia Electric Company	3—Limerick	Montgomery	1	1,055.0	Nuclear	2 Qtr., 1985
			2	1,055.0	Nuclear	4 Qtr., 1987
Safe Harbor Water Power Corporation	4—Safe Harbor	Lancaster	8	188.0	Hydro	4 Qtr., 1985
GPU—Metropolitan Edison	5—Three Mile Island	Dauphin	1	871.0	Nuclear	
			2	961.2	Nuclear	
GPU—Pennsylvania Electric Company	6—Raystown	Huntingdon	1	10.0	Hydro	2 Qtr., 1985
	7—Seward	Indiana	7	563.0	Coal	2 Qtr., 1989
	8—Warrior Ridge	Huntingdon	7	1.0	Hydro	2 Qtr., 1982
Duquesne Light	9—Beaver Valley	Beaver	2	862.0	Nuclear	2 Qtr., 1986

** This is an inventory of projected power plants in the Commonwealth. Pennsylvania utilities do not own all of this capacity, nor does this inventory include Pennsylvania-owned capacity located outside Pennsylvania.*

Sources: U.S. Department of Energy, Energy Information Administration, *Inventory of Power Plants in the United States — 1980 Annual.*
Pennsylvania Public Utility Commission, *Power System Statement,* PUC Docket 138.

PENNSYLVANIA'S ELECTRIC GENERATING FACILITIES BY SERVICE TERRITORY, EXISTING AND PROJECTED



Service Territories:

1. Citizen's Electric Company
2. Duquesne Light Company
3. Elkland Electric Company
4. Luzerne Electric Division U.G.I.
5. Metropolitan Edison Company
6. Pennsylvania Electric Company
7. Pennsylvania Power Company
8. Pennsylvania Power & Light Company
9. Philadelphia Electric Company
10. Pike County Light & Power Company
11. Wellsboro Electric Company
12. West Penn Power Company

Primary Fuels:

- O — oil
- C — coal
- H — hydro
- N — nuclear
- NG — natural gas
- PS — pumped storage

Existing Generating Stations

Projected Generating Stations

INSTALLED GENERATING CAPACITY OF ELECTRIC UTILITIES BY TYPE OF PRIME MOVER, 1970-1980
PENNSYLVANIA
Megawatts (Nameplate)

Year	Hydro	Conventional Steam	Nuclear Steam	Internal Combustion	Total
1970	1,653	17,638	156	111	19,558
1971	1,652	19,030	156	109	20,947
1972	1,651	20,858	156	109	22,775
1973	1,651	21,812	156	107	23,726
1974	1,651	22,113	3,321	99	27,184
1975	1,651	22,701	3,275	98	27,725
1976	1,651	24,153	4,183	98	30,065
1977	1,651	26,308	4,198	93	32,250
1978	1,651	26,388	5,159	89	33,287
1979	1,651	26,566	5,159	93	33,469
1980[1]	1,651	27,479	5,159	93	34,382

[1] *Preliminary.*

Source: Edison Electric Institute, *Statistical Year Book,* (1970-1980).

UTILITY FUEL COSTS FOR ELECTRIC GENERATION, 1970-1980
PENNSYLVANIA

	Coal[1]		Oil[2]		Gas[3]		Composite Averages	
Year	¢/MMBtu	$/Ton	¢/MMBtu	$/Bbl	¢/MMBtu	¢/Mcf	¢/MMBtu	¢/Net Kwhr
1970	31.4	7.30	46.6	2.83	45.1	44.3	34.5	0.38
1971	36.2	8.63	71.8	4.35	64.1	66.1	42.5	0.46
1972	40.0	9.89	72.9	4.37	67.5	69.2	45.3	0.48
1973	45.4	10.86	89.2	5.31	72.9	73.9	50.6	0.53
1974	74.7	17.42	206.3	12.37	113.0	114.8	93.3	0.99
1975	97.3	22.70	219.1	13.11	137.7	139.2	107.8	1.10
1976	100.3	23.82	211.4	12.76	133.6	133.7	111.9	1.15
1977	104.9	24.86	224.5	13.58	176.5	176.5	123.6	1.30
1978	121.8	28.81	233.5	14.16	191.8	191.8	140.8	1.48
1979	125.5	30.04	320.5	19.61	251.2	254.3	148.6	1.55
1980	137.1	33.06	455.1	28.00	342.4	347.7	171.1	1.78

[1] Coal includes bituminous and anthracite coal and relatively small amounts of coke, lignite, and wood.
[2] Oil includes fuel oil, crude oil, and small amounts of tar and gasoline.
[3] Gas includes natural and manufactured gas and waste gas.

Source: Edison Electric Institute, *Statistical Year Book*, (1970-1980).

MANUFACTURING PURCHASES OF ELECTRICITY BY SIC INDUSTRY GROUP, 1976-1978
PENNSYLVANIA
Million Kilowatt-hours

SIC	Industry Group	1976	1977	1978
20	Food and Kindred Products	1,702	1,683	1,763
21	Tobacco Manufacturers	33	34	33
22	Textile Mill Products	694	656	628
23	Apparel and Other Textile Products	324	293	358
24	Lumber and Wood Products	202	223	234
25	Furniture and Fixtures	129	155	154
26	Paper and Allied Products	1,747	1,767	1,867
27	Printing and Publishing	471	448	460
28	Chemicals and Allied Products	1,814	1,733	2,041
29	Petroleum and Coal Products	1,328	1,290	1,374
30	Rubber and Plastic Products	984	1,047	1,018
31	Leather and Leather Products	98	80	76
32	Stone, Clay and Glass Products	2,492	2,590	2,814
33	Primary Metal Products	12,181	13,285	13,332
34	Fabricated Metal Products	1,982	2,039	2,178
35	Machinery, Except Electrical	1,559	1,557	1,605
36	Electrical Equipment and Supplies	1,689	1,732	1,767
37	Transportation Equipment	857	920	1,044
38	Instruments and Related Products	302	298	305
39	Miscellaneous	190	299	305
Total All Industries		30,775	32,129	33,355

Source: Pennsylvania Department of Commerce, Bureau of Statistics, Research and Planning, *Energy Used by Pennsylvania Manufacturers,* (1976-1978). 1978 was the last year this report was published.

APPENDICES

A. Non-Energy Petroleum Products . . . . . .
B. Selected Macroeconomic Energy Indicators, Pennsylvania and United States . . . . . .
C. Heating Degree Days . . . . . .
D. United States Price Indices . . . . . .
E. Selected OPEC Energy Data . . . . . .
F. United States Petroleum Imports . . . . . .
G. Glossary . . . . . .
H. Conversion Factors . . . . . .

APPENDIX A
NON-ENERGY PETROLEUM PRODUCTS, 1960-1979
PENNSYLVANIA

Thousand Barrels

Year	Asphalt	Lubricants	Road Oil	Others	Total
1960	4,690	2,775	42	13,685	21,192
1961	4,705	2,701	36	14,613	22,055
1962	4,803	2,867	56	14,506	22,232
1963	4,895	2,866	40	16,715	24,516
1964	5,323	3,010	25	17,867	26,225
1965	6,173	3,540	29	19,757	29,499
1966	5,869	3,678	31	20,642	30,220
1967	6,361	3,276	31	18,048	27,716
1968	6,566	3,598	26	18,344	28,534
1969	6,379	3,774	51	17,638	27,842
1970	6,546	3,844	54	17,467	27,911
1971	6,654	3,629	6	17,171	27,460
1972	7,149	3,886	4	17,359	28,398
1973	6,973	4,795	3	19,668	24,469
1974	6,592	4,593	87	21,810	33,082
1975	5,661	3,349	2	19,771	28,783
1976	6,304	3,720	1	22,813	32,838
1977	6,569	4,066	0	27,084	37,719
1978	6,330	4,367	0	22,237	37,934
1979	6,030	4,569	23	26,974	37,596

Trillion Btu

Year	Asphalt	Lubricants	Road Oil	Others	Total
1960	31.1	16.8	0.3	90.4	138.6
1961	31.2	16.4	0.2	96.5	144.3
1962	31.9	17.4	0.4	96.2	145.9
1963	32.5	17.4	0.3	110.3	160.5
1964	35.3	18.3	0.2	117.0	170.8
1965	41.0	21.5	0.2	130.1	192.8
1966	38.9	22.3	0.2	135.2	196.6
1967	42.2	19.9	0.2	119.2	181.3
1968	43.6	21.8	0.2	122.3	187.9
1969	42.3	22.9	0.3	119.4	184.9
1970	43.4	23.3	0.4	118.4	185.5
1971	44.2	22.0	*	116.6	182.8
1972	47.4	23.6	*	118.4	189.4
1973	46.3	29.1	*	134.2	209.6
1974	43.7	27.9	0.6	149.6	221.9
1975	37.6	20.3	*	134.9	192.8
1976	41.8	22.6	*	153.8	218.2
1977	43.6	24.7	*	182.0	250.3
1978	42.0	26.5	0.0	181.7	250.2
1979	40.0	27.7	0.2	166.5	234.4

* *Represents small, non-zero value.*

Source: U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981.

APPENDIX B
SELECTED MACROECONOMIC ENERGY INDICATORS, 1960-1979
PENNSYLVANIA

Year	Population (Thousands)	Gross State Product (Billions of 1972 Dollars)	Primary Energy Consumption (T-Btu's)	Refined Petroleum Consumption (T-Btu's)	Primary Consumption Per Capita (MMBtu)	Primary Consumption Per G.S.P. (MBtu/72$)	Petroleum Consumption Per Capita (MMBtu)	Petroleum Consumption Per G.S.P. (MBtu/72$)
1960	11,319	45.7	3,109.1	1,017.3	274.7	68.1	89.9	22.3
1961	11,387	45.0	2,991.2	990.8	262.7	66.5	87.0	22.0
1962	11,336	46.5	3,093.6	1,028.6	272.9	66.5	90.7	22.1
1963	11,408	50.2	3,228.3	1,056.2	283.0	64.4	92.6	21.1
1964	11,505	50.9	3,440.0	1,065.1	299.0	67.6	92.6	20.9
1965	11,618	53.9	3,561.6	1,101.3	306.6	66.1	94.8	20.4
1966	11,657	57.6	3,657.7	1,138.5	313.8	63.5	97.7	19.8
1967	11,672	58.6	3,647.3	1,167.2	312.5	62.3	100.0	19.9
1968	11,750	60.1	3,767.8	1,236.3	320.7	62.7	105.2	20.6
1969	11,803	61.2	3,772.7	1,292.0	319.6	61.7	109.5	21.1
1970	11,801	60.1	3,948.9	1,337.9	334.6	65.7	116.8	22.9
1971	11,864	60.7	3,921.8	1,403.1	330.6	64.6	118.3	23.1
1972	11,871	63.8	4,080.5	1,489.9	343.7	64.0	125.5	23.4
1973	11,840	67.0	4,142.2	1,484.6	349.8	61.8	125.3	22.2
1974	11,807	65.8	3,936.5	1,438.4	333.4	59.8	121.8	21.9
1975	11,829	64.3	3,869.1	1,324.2	327.1	60.1	111.9	20.6
1976	11,807	67.0	4,099.0	1,466.6	347.2	61.2	124.2	21.9
1977	11,791	68.9	4,004.1	1,552.9	339.6	58.1	131.7	22.6
1978	11,763	71.7	4,016.0	1,545.2	341.4	56.0	131.4	21.6
1979	11,731	70.5	4,136.9	1,447.6	352.6	58.7	123.4	20.5
1980	11,867	70.1	NA	NA	NA	NA	NA	NA

[1] *Preliminary.*

Sources: U.S. Department of Commerce, Bureau of the Census, *1980 Census of Population*, Supplementary Reports, PC80-S1-1 (issued May 1981).
U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981.
Pennsylvania Department of Commerce, Bureau of Statistics, Research and Planning, *1980 Pennsylvania Abstract*.

APPENDIX B
SELECTED MACROECONOMIC ENERGY INDICATORS
UNITED STATES

Year	Population (Thousands)	Gross National Product (Billions of 1972 Dollars)	Primary Energy Consumption (T-Btu's)	Refined Petroleum Consumption (T-Btu's)	Primary Consumption Per Capita (MMBtu)	Primary Consumption Per G.N.P. (MBtu/72$)	Petroleum Consumption Per Capita (MMBtu)	Petroleum Consumption Per G.N.P. (MBtu/72$)
1960	179,979	737.2	41,815.1	17,651.1	232.3	56.7	98.1	23.9
1961	182,992	756.6	42,365.0	17,852.5	231.5	56.0	97.6	23.6
1962	185,771	800.3	44,319.9	18,568.9	238.6	55.4	100.0	23.2
1963	188,483	832.5	45,913.6	19,005.7	243.6	55.2	100.8	22.8
1964	191,141	876.4	47,868.3	19,387.5	250.4	54.6	101.4	22.1
1965	193,526	929.3	49,992.3	20,236.4	258.3	53.8	104.6	21.8
1966	195,576	984.8	52,833.3	21,222.2	270.1	53.6	108.5	21.5
1967	197,457	1,011.4	54,712.1	22,096.6	277.1	54.1	111.9	21.8
1968	199,399	1,058.1	57,911.8	23,561.5	290.4	54.7	118.2	22.3
1969	201,385	1,087.6	60,999.3	24,788.5	302.9	56.1	123.1	22.8
1970	203,810	1,085.6	63,206.2	25,854.4	310.1	58.2	126.9	23.8
1971	206,219	1,122.4	64,603.1	26,847.9	313.3	57.6	130.2	23.9
1972	208,234	1,185.9	67,629.6	28,956.5	324.8	57.0	139.1	24.4
1973	209,859	1,255.0	70,254.6	30,527.3	334.8	56.0	145.5	24.3
1974	211,389	1,248.0	68,435.1	29,248.5	323.7	54.8	138.4	23.4
1975	213,051	1,233.9	66,653.1	28,762.1	312.9	54.0	135.0	23.3
1976	214,680	1,300.4	70,142.5	30,891.8	326.7	53.9	143.9	23.8
1977	216,400	1,371.7	71,514.9	32,401.0	330.5	52.1	149.7	23.6
1978	218,228	1,436.9	72,933.1	32,933.4	334.2	50.8	150.9	22.9
1979	220,099	1,483.0	73,496.8	31,813.0	333.9	49.6	144.5	21.5
1980	226,505	1,480.7	NA	NA	NA	NA	NA	NA

Sources: U.S. Department of Commerce, Bureau of the Census.
U.S. Department of Commerce, Bureau of Economic Analysis.
U.S. Department of Energy, Energy Information Administration, *State Energy Data Report*, September 1981; *State Energy Data Report Supplement*, October 1981.

APPENDIX C
HEATING DEGREE DAYS FOR PENNSYLVANIA AND SELECTED CITIES

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
PENNSYLVANIA													
1970/71	5	8	48	294	626	1,004	1,266	965	909	537	270	14	5,946
1971/72	11	19	46	217	705	841	1,049	1,076	884	539	176	79	5,642
1972/73	5	13	76	505	763	896	1,046	1,013	615	451	280	13	5,676
1973/74	4	4	73	309	626	962	993	999	779	414	223	58	5,444
1974/75	8	10	132	471	639	955	1,007	932	876	618	123	28	5,799
1975/76	5	7	160	292	523	1,000	1,266	793	668	391	252	15	5,372
1976/77	18	26	137	521	870	1,211	1,524	1,008	652	389	129	60	6,545
1977/78	2	11	68	436	613	1,092	1,300	1,255	934	498	228	39	6,476
1978/79	10	6	87	439	644	976	1,219	1,283	715	496	198	53	6,126
1979/80	9	13	102	421	579	936	1,137	1,103	900	450	166	65	5,881
1980/81	5	2	59	462	778	1,124	1,338	883	891	395	206	30	6,173
ALLENTOWN													
1970/71	0	0	64	292	621	1,056	1,326	969	900	512	250	24	6,014
1971/72	0	8	52	191	719	877	1,064	1,102	853	531	127	54	5,578
1972/73	4	11	69	513	745	924	1,055	995	633	446	275	6	5,676
1973/74	0	2	72	290	593	922	1,036	968	755	385	216	32	5,271
1974/75	2	0	123	471	638	917	1,027	919	841	577	98	19	5,632
1975/76	0	7	122	257	482	995	1,262	820	713	414	219	28	5,319
1976/77	1	9	101	455	817	1,174	1,428	950	604	384	127	35	6,085
1977/78	0	10	56	356	623	1,077	1,238	1,190	871	430	189	15	6,055
1978/79	9	0	94	368	614	971	1,142	1,241	633	460	125	29	5,686
1979/80	13	22	76	386	509	884	1,058	1,087	808	356	87	41	5,327
1980/81	0	0	26	326	702	1,092	1,290	823	818	392	163	6	5,638
AVOCA													
1970/71	2	5	109	371	695	1,162	1,404	1,051	985	593	292	32	6,701
1971/72	5	22	90	263	783	951	1,152	1,175	992	634	168	109	6,344
1972/73	21	20	125	603	860	988	1,124	1,131	704	521	354	25	6,476
1973/74	2	11	140	368	699	1,036	1,145	1,135	934	480	291	65	6,306
1974/75	5	2	155	503	655	941	1,024	913	902	627	88	25	5,840
1975/76	0	8	158	291	509	1,043	1,322	864	737	451	265	31	5,679
1976/77	8	25	155	519	834	1,297	1,546	1,058	756	487	206	90	6,981
1977/78	14	37	119	505	653	1,090	1,252	1,279	984	562	240	73	6,808
1978/79	38	2	153	436	728	1,103	1,257	1,370	747	552	221	66	6,673
1979/80	34	31	120	420	568	900	1,144	1,175	895	414	137	94	5,932
1980/81	1	0	82	466	813	1,211	1,407	835	886	416	195	19	6,331

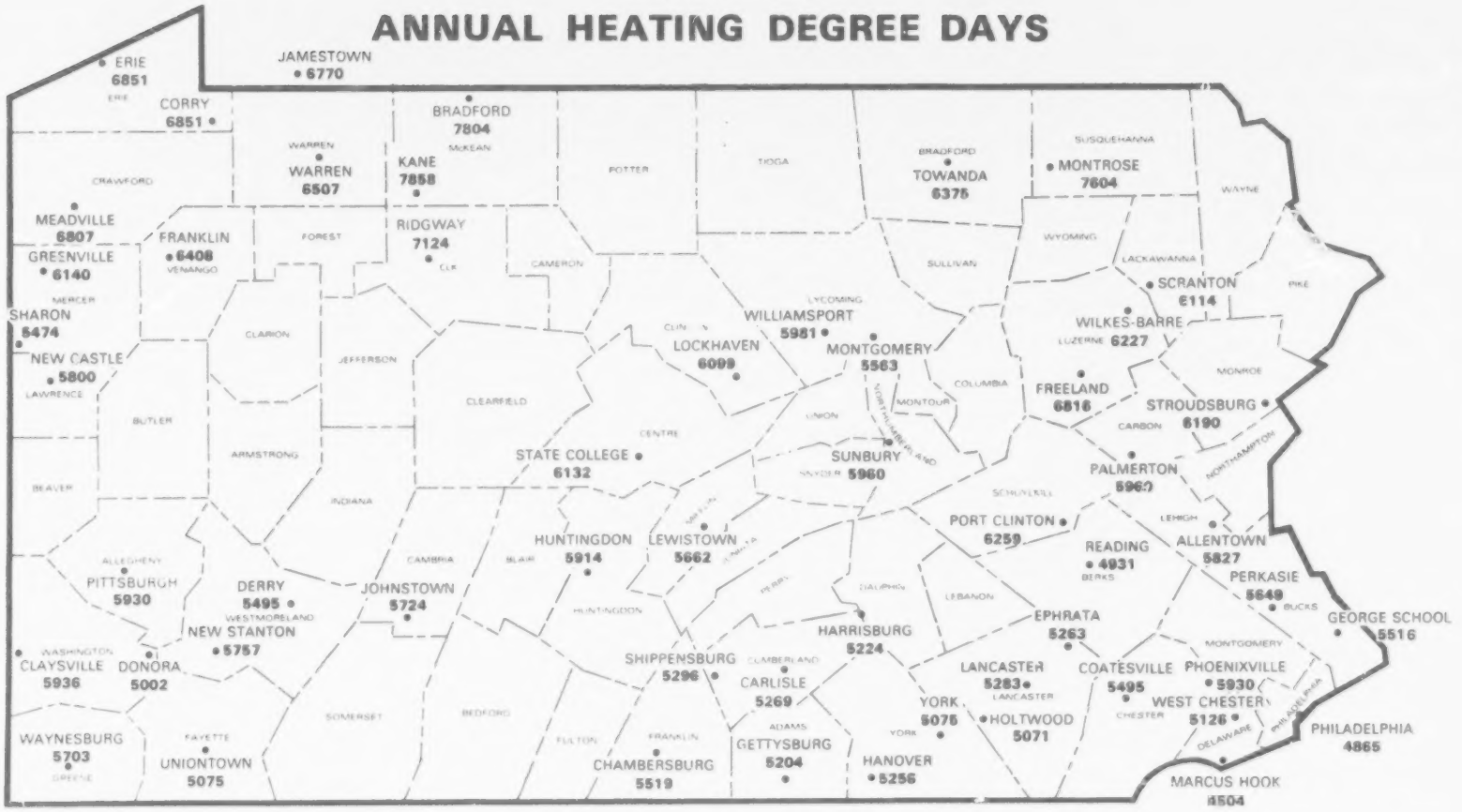
Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
ERIE													
1970/71	18	18	125	366	731	1,056	1,324	1,048	1,078	723	404	68	6,959
1971/72	32	55	97	242	763	895	1,172	1,217	1,082	742	287	184	6,768
1972/73	55	47	144	546	820	976	1,090	1,146	697	568	379	40	6,508
1973/74	9	18	141	309	658	1,022	1,077	1,128	915	521	373	101	6,272
1974/75	32	9	204	511	713	1,046	1,081	1,016	1,013	781	203	51	6,660
1975/76	3	14	197	381	546	1,057	1,361	931	804	580	386	51	6,311
1976/77	28	42	163	519	920	1,269	1,620	1,116	751	519	249	126	7,322
1977/78	9	51	110	477	636	1,131	1,395	1,408	1,143	688	303	84	7,435
1978/79	15	2	125	481	723	1,046	1,406	1,424	874	678	369	106	7,249
1979/80	36	17	84	378	634	939	1,188	1,275	1,045	644	299	161	6,700
1980/81	12	2	108	520	775	1,156	1,400	967	982	523	345	42	6,832
HARRISBURG													
1970/71	0	0	39	213	564	931	1,192	884	812	432	165	12	5,244
1971/72	0	3	40	146	643	759	940	1,001	766	457	108	44	4,907
1972/73	0	1	25	395	686	865	964	926	607	422	227	7	5,125
1973/74	0	1	34	238	534	887	931	910	683	289	133	2	4,642
1974/75	0	0	94	414	600	911	977	903	818	520	97	13	5,347
1975/76	0	0	87	232	445	951	1,150	730	639	354	193	23	4,804
1976/77	0	5	75	418	756	1,075	1,387	966	588	340	106	32	5,748
1977/78	0	5	35	377	562	1,029	1,196	1,175	810	414	173	17	5,793
1978/79	14	0	48	321	544	876	1,104	1,182	611	435	123	26	5,284
1979/80	12	14	71	393	536	844	1,070	1,033	799	361	103	48	4,284
1980/81	0	0	57	411	761	1,091	1,277	844	809	339	147	6	5,742
PHILADELPHIA													
1970/71	0	0	29	191	499	899	1,145	802	746	394	140	3	4,848
1971/72	0	0	17	79	576	719	920	941	748	450	86	26	4,562
1972/73	0	0	22	378	635	775	940	874	547	359	176	1	4,707
1973/74	0	0	18	196	507	810	897	926	667	292	128	11	4,452
1974/75	0	0	46	313	500	786	852	612	732	483	66	4	4,594
1975/76	0	0	45	152	372	866	1,120	692	572	307	119	13	4,258
1976/77	0	2	42	387	743	1,069	1,390	873	505	258	73	36	5,378
1977/78	0	0	24	328	558	998	1,139	1,121	797	423	161	10	5,559
1978/79	5	0	41	296	507	811	999	1,170	556	378	38	17	4,818
1979/80	4	7	28	324	439	823	1,021	1,016	763	301	72	17	4,815
1980/81	0	0	22	320	646	999	1,222	752	768	309	129	4	5,171

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
PITTSBURGH													
1970/71	5	1	69	318	678	1,013	1,277	961	949	562	264	6	6,103
1971/72	1	6	41	184	729	807	1,093	1,112	881	489	128	96	5,567
1972/73	20	11	63	508	767	853	1,087	1,006	508	474	264	2	5,563
1973/74	2	8	55	274	621	978	957	978	729	403	223	54	5,282
1974/75	0	0	124	384	630	1,001	997	916	881	617	116	48	5,714
1975/76	0	0	192	362	554	989	1,278	801	605	453	301	24	5,559
1976/77	15	59	159	587	953	1,268	1,655	1,060	658	436	138	102	7,090
1977/78	11	41	78	442	583	1,043	1,307	1,229	860	412	209	38	6,253
1978/79	4	3	80	485	656	993	1,346	1,311	671	458	219	38	6,264
1979/80	23	26	111	438	601	935	1,175	1,177	906	500	172	71	6,135
1980/81	0	5	48	476	787	1,117	1,372	936	904	391	223	18	6,277
WILLIAMSPORT													
1970/71	0	0	56	271	591	990	1,297	961	871	495	212	16	5,760
1971/72	0	7	58	201	757	921	1,122	1,176	923	562	141	90	5,958
1972/73	12	19	91	565	810	942	1,125	1,089	664	479	306	16	6,118
1973/74	5	16	119	354	672	1,027	1,087	1,047	828	427	258	36	5,876
1974/75	1	0	142	488	648	950	1,059	940	852	648	155	44	5,927
1975/76	1	9	168	324	529	1,023	1,305	850	704	393	217	19	5,542
1976/77	0	12	121	478	855	1,201	1,547	1,008	624	366	119	38	6,369
1977/78	4	15	46	444	588	1,126	1,300	1,239	938	495	190	28	6,413
1978/79	9	0	76	381	633	998	1,179	1,264	696	497	167	40	5,940
1979/80	15	19	131	438	601	919	1,141	1,134	863	405	139	77	5,882
1980/81	0	0	65	472	830	1,232	1,378	886	877	391	130	7	6,268

Sources: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Environmental Data and Information Service, *Historical Climatology Series No. 5-1, State, Regional, and National Monthly and Seasonal Heating Degree Days Weighted by Population; Local Climatological Data, Annual Summary with Comparative Data.*

Pennsylvania Climate

ANNUAL HEATING DEGREE DAYS



NOTE: These heating degree day figures are based on 65° standard.

Source: NCC

APPENDIX D
UNITED STATES PRICE INDICES, 1970-1980

Year	Consumer Price Index All Items 1967=100	Gross National Product Implicit Price Deflator 1972=100	Producer Price Index All Commodities 1967=100	Personal Consumption Expenditures, Total 1972=100
1970	116.3	91.5	110.4	92.5
1971	121.3	96.0	114.0	96.6
1972	125.3	100.0	119.1	100.0
1973	133.1	105.7	134.7	105.5
1974	147.7	114.9	160.1	116.9
1975	161.2	125.5	174.9	126.4
1976	170.5	132.1	183.0	132.8
1977	181.5	139.8	194.2	140.4
1978	195.4	150.1	209.3	150.0
1979	217.4	162.8	235.6	162.3
1980	246.8	177.4	280.8	178.9

Sources: U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, Annual (1980).
U.S. Department of Commerce, Bureau of Economic Analysis, *Economic Indicators*, (monthly).

APPENDIX E
SELECTED OPEC ENERGY DATA

	1980 Crude Oil Production[1] (MBD)	1980 Crude Oil Official Sales Price[2] ($/BBL)	Estimated Proved Reserves (Dec. 31, 1980, 10^9 BBL)
Middle East			
Iran	1,662	34.07	57.5
Iraq	2,514	30.30	30.0
Kuwait	1,656[3]	29.84	67.9
Qatar	472	31.76	3.6
Saudi Arabia	9,900[3]	28.66	168.0
United Arab Emirates	1,709	31.57	30.4
North Africa			
Algeria	1,012	37.59	8.2
Libya	1,787	36.07	23.0
West Africa			
Gabon	175	31.09	0.5
Nigeria	2,055	35.50	16.7
Far East			
Indonesia	1,577	30.55	9.5
South America			
Ecuador	204	34.42	1.1
Venezuela	2,167	28.44	18.0
Total	26,890	30.87[4]	434.4

[1] *Preliminary.*
[2] *F.O.B. prices set by the government for direct sales, and in most cases, for the producing company buy-back oil.*
[3] *Includes about one-half of the production in the former Kuwait-Saudi Arabia Neuural Zone.*
[4] *OPEC average — weighted by the volume of production.*

Sources: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, August 1981; *1980 Annual Report to Congress, Volume Two: Data.*
Salomon Brothers, *Petroleum Monthly*, August 1981.

APPENDIX F
UNITED STATES PETROLEUM IMPORTS, 1973-1980
(Thousands of Barrels per Day)

	1973	1974	1975	1976	1977[1]	1978[1]	1979[1]	1980[1]
OPEC Sources								
Algeria	136	190	282	432	559	649	636	483
Indonesia	213	300	390	539	541	573	420	341
Iran	223	469	280	298	535	555	304	8
Libya	164	4	232	453	723	654	658	552
Nigeria	459	713	762	1,025	1,143	919	1,080	847
Saudi Arabia	486	461	715	1,230	1,360	1,144	1,356	1,257
United Arab Emirates	71	74	117	254	335	385	281	179
Venezuela	1,135	979	702	700	690	645	690	463
Other[2]	106	88	122	134	287	226	212	121
Sub-Total	2,993	3,280	3,601	5,066	6,193	5,751	5,637	4,251
Non-OPEC Sources								
Bahamas	174	164	152	118	171	160	147	78
Canada	1,325	1,070	846	599	517	467	538	446
Mexico	16	8	71	87	179	318	439	530
Netherland Antilles	585	511	332	275	211	229	231	226
Puerto Rico	99	90	90	88	105	94	92	85
Trinidad/Tobago	255	251	242	274	289	253	190	176
Virgin Islands	329	391	406	422	466	429	431	383
Other[3]	480	347	314	382	676	663	751	656
Sub-Total	3,263	2,832	2,454	2,247	2,614	2,613	2,819	2,580
TOTAL	6,256	6,112	6,056	7,313	8,807	8,364	8,456	6,831

[1] *Includes imports into the Strategic Petroleum Reserve.*

[2] *Includes Ecuador, Gabon, Iraq, Kuwait and Qatar.*

[3] *Includes Non-OPEC Arab, Western Europe, Angola, U.S.S.R., Rumania, other Western Hemisphere and Eastern Hemisphere.*

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, August 1981.

APPENDIX G
GLOSSARY

Anthracite Coal: A hard black lustrous coal containing a high percentage of fixed carbon, a low percentage of volatile matter and generally having a heating value of 13,500 to 15,000 Btu per pound. Often referred to as "hard coal."

Asphalt: A dark brown to black cement-like material. The predominant constituents are bitumens which are obtained in petroleum processing. Its constituency can vary from a liquid to a solid. It is used as a base for road surfacing and other adhesive or protective purposes.

Aviation Gasoline: All special grades of gasoline for use in aviation reciprocating engines. It includes all refinery products within the gasoline range or additives that are blended into finished aviation gasoline.

Barrel: A volumetric unit of measurement equivalent to 42 U.S. gallons when referring to petroleum and petroleum products.

Bituminous Coal: A coal that is high in carbonaceous matter having a volatility greater than anthracite, a calorific value greater than lignite and generally having a heat value of 12,000 to 15,000 Btu per pound. Often referred to as "soft coal."

British Thermal Unit (Btu): The quantity of heat necessary to raise the temperature of one pound of water one degree Fahrenheit.

Capacity: The load for which a generator, turbine, transformer, transmission circuit, station, or system is rated. Installed capacity is that capacity shown by the nameplates of electrical apparatus, such as generating units, turbines, or other equipment in a station or system. The nameplate capacity is the full-load continuous rating of a generator, prime mover, or other electrical equipment under specified conditions as designated by the manufacturer.

Coke: Bituminous coal from which constituents have been driven off by heat so that the fixed carbon and the ash are fused together. It is used primarily in blast furnaces for smelting ores, especially iron ore.

Commercial Sector: Non-manufacturing business establishments which engage primarily in the sale of goods or services and for uses not directly involving industrial uses, electric utilities and residential uses. Included are motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises, as well as health, social, and educational institutions, and federal, state, and local government.

Constant Dollars: Dollars adjusted to eliminate inflation from their value to reflect the value of one dollar in a base year; e.g., if the price in current dollars of gasoline has increased 15 percent, but the inflation rate is also 15 percent, the price in constant dollars has not gone up.

Crude Oil: A mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities.

Current Dollars: Dollar values that have not been corrected for changes in the general price level.

Degree Days: A unit that represents one degree of declination from a given point (as 65°) in the mean daily outdoor temperature and that is used to measure heat requirements. A "cooling degree day" represents each degree of outdoor air temperature above 65° Fahrenheit. "Heating degree days" are deviations of the mean daily temperature below 65° Fahrenheit.

Distillate Fuel Oil: A light fuel oil distilled off during the refining process. Included are products known as No. 1 and No. 2 heating oils, diesel fuels, and No. 4 fuel oil. These products are used primarily for space heating, on- and off-highway diesel engine fuel and electric power generation.

Electric Utility: An enterprise engaged in the production, transmission or distribution of electricity for use by the public, including investor-owned, cooperatively-owned and government-owned (municipal systems, Federal agencies, state projects, and public power districts).

End User: Any ultimate consumer of any type of fossil fuel (petroleum, coal, natural gas) or electricity whether generated by fossil fuel or other energy sources. End users are often classified by economic sector, such as residential, commercial, industrial, transportation, agriculture and government.

Ethane: A normally gaseous, colorless compound recovered as a liquid at natural processing plants and refineries. It is used primarily as petrochemical feedstock for eventual production of chemicals and plastic materials.

Feedstock: The raw material furnished to a machine or process. Fossil fuels are used for their chemical properties rather than their values as fuel; e.g., oil used to produce plastics and synthetic fabrics.

Fossil Fuels: Any naturally occurring fuel of an organic nature, such as coal, crude oil, and natural gas.

Free on Board (F.O.B.): A term used in sales price quotations meaning, in general, that the seller assumes all responsibility and costs up to the specific point of delivery and that the buyer takes over responsibility and costs at that same point.

Generation (Electric): The act of producing electric energy from other forms of energy; also, the amount of electric energy so produced, expressed in watthours (wH). Gross generation is the total amount of electric energy produced by the generating units in a generating station or stations, measured at the generator terminals. Net generation is equal to gross generation less the electric energy consumed at the generating station for station use.

Geothermal Energy: The heat energy in the earth's crust which derives from the earth's molten interior. It can be tapped as steam or by injection of water to form steam.

Gross National Product (GNP): The annual total value of the national output; the total value of goods and services in a given year.

Hydro Power: Electricity generation using water flow to drive a turbine.

Implicit GNP Price Deflator: A measure of the change in U.S. price levels which is the ratio of the current value of goods and services to the base year value for the same goods and services.

Industrial Sector: The sector of the economy engaged primarily in either mining, construction, manufacturing and agriculture.

Installed Capacity: The sum of the engineering rating in watts of a public utility's electric generating units. The expected amount of power than can be produced by a specific unit or by a collection of units.

Jet Fuel: Includes both naphtha-type and kerosene-type jet fuel meeting standards for use in aircraft turbine engines. Although most jet fuel is used in aircraft, some is used to generate electricity in gas turbines.

Kerosene: A petroleum middle distillate having burning properties suitable for use as an illuminant when burned in wick lamps. It is used primarily in space heaters, cooking stoves, and water heaters.

Kilowatt Hour (Kwh): The amount of electrical energy equal to that expended by one thousand watts in one hour. One kilowatt hour is equivalent to 3,412 Btu of heat energy.

Lignite: A brownish-black coal of low rank with high inherent moisture and volatile matter. It is also referred to as "brown coal." It is used almost exclusively for electric power generation. It has a heating value of 6,000 to 7,500 Btu per pound.

Liquefied Gases: Propane, propylene, butanes, butylene, ethane-propane mixtures and propane-butane mixtures produced at a refinery or natural gas processing plant, including plants that fractionate raw natural gas plant liquids.

Load Factor: The ratio of average load carried by an electric power plant or system during a specific period to its peak load during that period.

Lubricants: All lubricating oils containing more than 50 percent by volume of refined petroleum distillate or specially treated petroleum residuum. Included are lubricating greases, lube base stocks, and all grades of lubricating oils from spindle oil and cylinder oil to those used in greases.

Megawatt (Mw): One million watts. One thousand kilowatts.

Methane (CH_4): The primary constituent of natural gas.

Motor Gasoline: A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark ignition engines. Included are leaded and unleaded products and all refinery products.

Natural Gas: A mixture of hydrocarbon compounds and small quantities of various non-hydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions. The heat content of natural gas (dry) is 1,021 Btu's per cubic foot.

Natural Gas, Marketed Production: Gross withdrawals from producing reservoirs less gas used for repressuring and quantities vented and flared.

Natural Gas Plant Liquids: Products obtained from processing natural gas at natural gas processing plants, including natural gasoline plants, cycling plants, and fractionators. Products obtained include ethane, liquefied petroleum gases (propane, butanes, propane-butane mixtures, and ethane-propane mixtures), isopentane, natural gasoline, unfractionated streams, plant condensate, and minor quantities of other finished products such as motor gasoline, special naphthas, jet fuel, kerosene, and distillate fuel oil.

Nuclear Energy: Energy liberated by a nuclear reaction (fission or fusion) or by radioactive decay.

Organization of th Petroleum Exporting Countries (OPEC): In 1980, OPEC included Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela.

Petroleum: A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oil, refined petroleum products, natural gas plant liquids, and non-hydrocarbon compounds blended into finished petroleum products.

Petroleum Imports: Imports of petroleum into the 50 states and the District of Columbia from foreign countries, U.S. territories, and the U.S. Foreign Trade Zones. Included are imports for the Strategic Petroleum Reserve and withdrawals from bonded warehouse for onshore consumption, offshore bunker use, and military use.

Plant (Electric): A station at which are located prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or nuclear energy into electric energy.

Prime Mover: The engine, turbine, water wheel or similar machine which drives an electric generator.

Propane: A colorless, highly volatile hydrocarbon that is gaseous at ordinary atmospheric conditions and readily recovered as a liquid at natural gas processing plants and refineries. It is used primarily for residential and commercial heating and cooling, and also as a fuel for transportation and industrial uses, including petrochemical feedstock uses.

Proved Reserves: The estimated quantities of crude oil or natural gas which geological and engineering data demonstrate with reasonable certainty to be recoverable in the future from known reservoirs under existing economic and operating conditions.

Quadrillion: One million billion or 10^{15}.

Refined Petroleum Products: Products obtained from the processing of crude oil, unfinished oils, natural gas liquids, and othe miscellaneous hydrocarbn compounds. Includes aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, ethane, liquefied petroleum gases, petrochemical feedstocks, special naphthas, lubricants, paraffin wax, petroleum coke, asphalt, road oil, still gas, natural gasoline, unfractionated streams and miscellaneous products.

Refinery: An industrial plant which processes crude oil and manufactures refined petroleum products.

Renewable Energy: Energy from sources that can be or are naturally replenished, such as wind, solar, tidal, biomass, geothermal.

Residential Sector: Private household establishments which cover mobile homes, single family detached homes, multifamily low-rise structures, multifamily high-rise structures, farm residences. Specifically included are the following end uses: space heating, water heating, air conditioning, cooking, lighting, clothes drying and refrigeration.

Residual Fuel: The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as No. 5 and No. 6 fuel oil, heavy diesel oil, Navy Special Fuel Oil, Bunker C fuel oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes.

Retail Sales: Retail sales of coal for commercial or residential heating.

Road Oil: Any heavy petroleum oil, including residual asphaltic oils, used as a dust palliative and for surface treatment of roads and highways. It is generally produced in six grades from 0, the most liquid, to 5, the most viscous.

Special Naphthas: All finished products within the gasoline range, specifically refined to a specified flash point and boiling range, for use as paint thinners, cleaners, and solvents. Excluded are naphthas to be blended or marketed as motor gasoline or aviation gasoline, or to be used as petrochemical and synthetic natural gas (SNG) feedstock.

Strategic Petroleum Reserves: A plan developed to reduce the impact of interruption of imports of petroleum.

Subbituminous Coal: Black lignite or lignite coal of rank intermediate between lignite and bituminous coal. Used almost exclusively for electric power generation. It has a heating value of 9,000 to 11,000 Btu per pound.

Transportation Sector: The sector of the economy engaged in moving people and commodities in both the public and private sectors. Included are military, railroad, vessel bunkering, and marine uses, as well as the pipeline transmission of natural gas.

Watt: Electrical unit of power or work equal to one ampere flowing under a pressure of one volt.

APPENDIX H
CONVERSION FACTORS

Approximate Heat Content of Various Fuels		1976	1977	1978	1979	1980
Anthracite						
Production	Btu/short ton	22,770,000	23,180,000	23,520,000	23,590,000	23,590,000
Imports/Exports	Btu/short ton	25,400,000	25,400,000	25,400,000	25,400,000	25,400,000
Electric Utility Consumption	Btu/short ton	17,530,000	17,240,000	17,100,000	17,450,000	17,380,000
Non-Utility Consumption	Btu/short ton	23,840,000	24,990,000	25,170,000	25,200,000	24,690,000
Bituminous Coal and Lignite						
Production	Btu/short ton	23,150,000	22,700,000	22,430,000	22,590,000	22,590,000
Imports	Btu/short ton	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000
Exports	Btu/short ton	27,000,000	27,000,000	27,000,000	27,000,000	27,000,000
Electric Utility Consumption	Btu/short ton	21,690,000	21,480,000	21,280,000	21,380,000	21,310,000
Non-Utility Consumption	Btu/short ton	25,870,000	25,130,000	25,070,000	25,060,000	25,970,000
Crude Petroleum	Btu/barrel	5,800,000	5,800,000	5,800,000	5,800,000	5,800,000
LPG Consumption Average	Btu/barrel	3,711,000	3,677,000	3,669,000	3,680,000	3,680,000
Natural Gas, dry, Production/Consumption	Btu/cubic foot	1,020	1,021	1,019	1,021	1,021
Natural Gas, wet, Production	Btu/cubic foot	1,093	1,093	1,088	1,092	1,092
Hydro Power	Btu/Kwh	10,373	10,435	10,435	10,435	10,435
Nuclear Power	Btu/Kwh	11,047	10,769	10,769	10,769	10,769
Electricity Consumption	Btu/Kwh	3,412	3,412	3,412	3,412	3,412

Petroleum Products:	Btu/barrel	Petroleum Products:	Btu/barrel
Asphalt & Road Oil	6,636,000	Motor gasoline	5,253,000
Aviation gasoline	5,048,000	Natural gasoline	4,620,000
Distillate fuel oil	5,825,000	Petroleum coke	6,024,000
Jet fuel, kerosene type	5,670,000	Propane	3,836,000
Jet fuel, naphtha type	5,355,000	Residual fuel oil	6,287,000
Kerosene	5,670,000	Still gas	6,000,000
Lubricants	6,065,000	Wax	5,537,000

Abbreviations

M — Thousand or 10^3
MM — Million or 10^6
B — Billion or 10^9
T — Trillion or 10^{12}

Btu — British Thermal Unit
Bbl — Barrel
Cf — Cubic Feet

Gal — Gallon
Kwh — Kilowatt-hour
Gwh — Gigawatt-hour or million Kwh

G.S.P. — Gross State Product
G.N.P. — Gross National Product
OPEC — Organization of Petroleum Exporting Countries

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ENERGY FLOWS IN PENNSYLVANIA - 1979

TRILLION BTU